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The AI opportunity for eGovernment in Finland

The opportunity for the Finnish Government to turn its AI ambitions into reality

April 2025

Generative AI has significant potential to enhance productivity in public administration in Finland, creating 10% more value for money equivalent to an annual contribution of EUR 1.4 billion.

AI in public administration is a good place to start. This report explores the substantial potential of generative AI in Finland's public administration, which is well-suited for early AI benefits with low risk.

Early AI adoption by the government can accelerate AI uptake across the economy by setting an example within existing regulations**.** Furthermore, the government plays a crucial role in clarifying and simplifying the regulations governing AI use in Finland.

What is eGovernment?

The European Commission defines eGovernment as:

"Effective digital public services which can provide a wide variety of benefits. These include more efficiency and savings for governments and businesses, increased transparency, and greater participation of citizens in political life.

[…] eGovernment involves more than just the tools: it involves rethinking organisations and processes and changing behaviour so that public services are delivered more efficiently to people.

Implemented well, eGovernment enables citizens, enterprises and organisations to carry out their interactions with government more easily, more quickly and at lower cost."

The government must overcome five key barriers…

- Fragmented decision-making
- Fear of breaking the rules
- Lack of public support
- Regulatory uncertainty
- Vendor lock-in risk

Make the AI potential executable…

Think 'task-based'

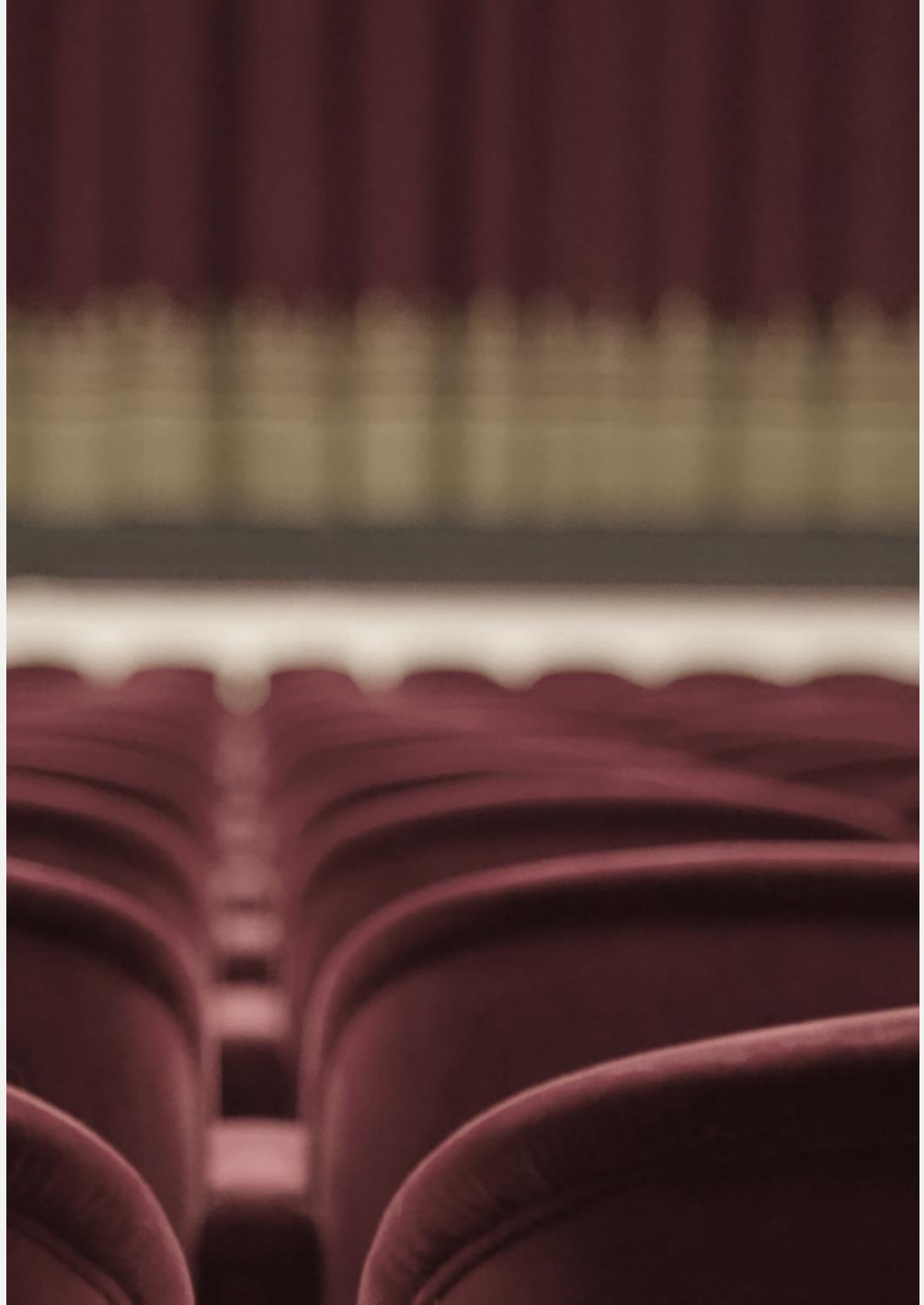
Cross-cutting tasks underpin most jobs in public administration. The top five tasks in Finland represent 85% of the potential. However, fragmented decision-making leads to many pilots without scalable impact. The government should focus on key cross-cutting tasks to achieve economies of scale while addressing local needs.

Think 'risk-conscious'

Low-risk, internal AI applications constitute 20% of the total potential. The fear of breaking rules in a complex regulatory environment is slowing AI adoption. Therefore, the Finnish government should begin with the low-risk applications and gradually move to user-sensitive, externally-facing applications to unlock most of the potential.

Think 'impact-oriented'

The implementation of AI solutions should be motivated by the needs of citizens and businesses, improving the user experience and reducing the time and hassle in their interactions with the public administration. Generative AI can reduce the administrative burden for businesses in Finland by EUR 300-400 million annually.



Note: The term '*public administration*' in this report refers to the administration of public institutions, including the organisation and administration of public services and legislation, while **not** including health and education.

Get critical enablers in place by…

Create cloud clarity

A secure and competitive cloud infrastructure is crucial for cost-efficiently implementing advanced AI at scale. However, misconceptions about on-premise systems prevent public institutions from adopting cloud infrastructure. The government should establish a framework for secure and compliant cloud adoption, enabling public actors to innovate while safeguarding transparency and sovereignty.

Make smart procurement choices

Governments must carefully assess the risk of vendor lock-in and ensure an interoperable AI procurement framework. Vendor lock-in risk leads to suboptimal, inefficient and costly AI solutions in the public administration. Across five European countries, 60% of surveyed IT decision makers in the public sector cited licensing restrictions as a key barrier to switching.

Implement an ambitious AI strategy

To fully harness the AI potential in the public sector, Finland should set ambitious targets and create an actionable strategy with clear milestones. The 2019 AI programme aims to fully exploit the opportunities of AI. Now the government should adopt an actionable AI strategy that includes risk and impact measures for prioritising and scaling successful applications.

Introduction

A large and untapped potential

To realise the AI potential in the public administration in Finland must overcome five key barriers

> *Generative AI can transform public administration by automating mechanical, repetitive tasks, streamlining decision-making, and improving citizen services.*
>
> Finnish Ministry of Finance (2024)

AI can enhance the efficiency and quality of public services benefitting citizens, businesses and employees

According to the Finnish Ministry of Finance, AI could…

Increase public efficiency

Generative AI can, at its best, offer new opportunities for improving the efficiency of public sector work and developing services.

Assist in daily tasks

[Generative AI] can be used to simplify many tasks that government officials work on every day. For example, the tools can assist in learning about a new topic, planning or drafting presentations, summarising long articles, or writing a short code snippet for a desired function, just like search engines.

Increase accessibility

At the local level, generative AI tools are already being used extensively to support the work of authorities and improve digital services for citizens. This includes chatbots and virtual assistants that help citizens find relevant information more efficiently and interact with government agencies in a more accessible manner.

Break down language barriers

Generative AI enables AI-based conversations in local languages, breaking down language barriers and achieving broader accessibility.

To realise these benefits, this analysis identifies five key barriers and outlines how to unlock the AI potential.

Note: Quotes have been translated by Implement Consulting Group.
Source: Implement Economics based on Finnish Ministry of Finance (2024).

The Finnish government can get 10% more value for money by adopting generative AI

Generative AI presents a significant economic opportunity for Finland, potentially contributing 8% (EUR 20–25 billion) to GDP annually in ten years.

In public administration, generative AI can significantly enhance productivity and drive cost-efficiency. Widespread adoption of generative AI in public administration can create EUR 1.4 billion in additional value with the same resources. The potential is equivalent to 1% of public expenditure.

Demonstrating successful AI use in public administration will be key for unlocking the full economic potential of generative AI.

Economic potential of generative AI in Finland
EUR billion at widespread adoption

10% more value for money equivalent to **EUR 1.4 billion** annual contribution

Note: The economic potential in public administration is measured in terms of gross value added (GVA). GVA is the standard measure of economic value at sector level and is a major part of the gross domestic product (GDP), which also includes net taxes. See appendix for details. Public expenditure based on 2022 data. "Public administration" refers to NACE sector O (Public administration and defence; compulsory social security) and comprises activities related to the administration of the state and the economic and social policy of the community, but not health, education and activities performed by private organisations, voluntary associations, or businesses providing similar services.
Source: Implement Economics based on Statistics Finland, O*NET, and Briggs and Kodnani (2023).

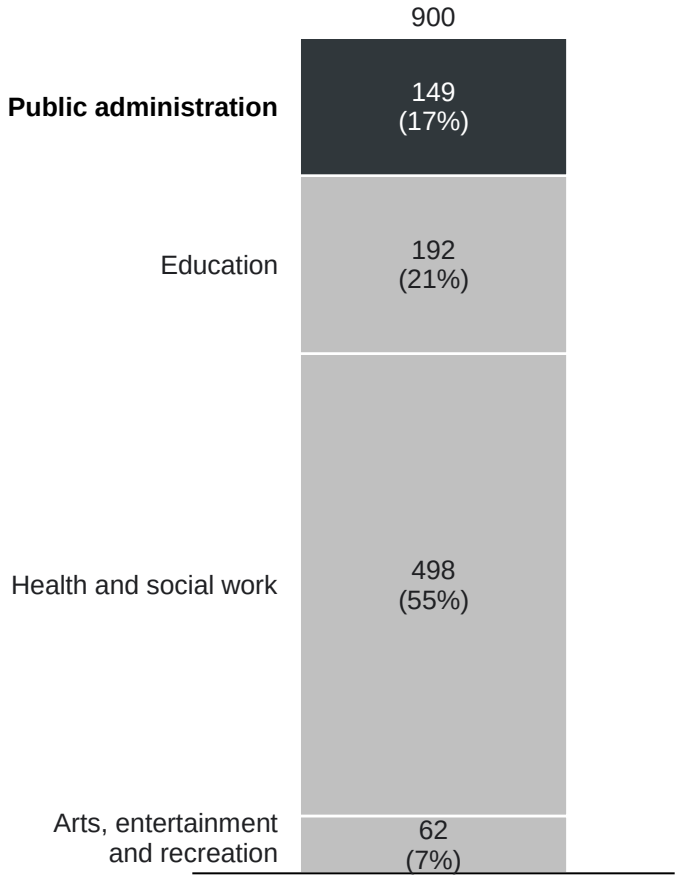
Public administration is the backbone of the public sector in Finland

The public sector is an important part of the Finnish economy and society. Public expenditure is equivalent to 56% of Finland's GDP. Further, Finland has one of the highest public to private employment rates, 25%, as compared to 19% for the OECD on average.

Public administration makes up ~17% of public sector jobs. Their work has characteristics that allow it to benefit from generative AI, such as text heavy work, repetitive tasks and complex analysis.

Public administration includes all levels of government and forms the backbone of the public sector.

Employment in the public sector in Finland
Thousand employees, 2023



The public administration is the focus of this report. It provides value through key functions such as:

- **Citizen advisory**: Providing guidance on government services, legal rights, and administrative procedures.
- **Individual case handling:** Processing citizen applications for public services.
- **Finance and budgeting:** Managing public funds and disbursing benefits, subsidies and aid.
- **General governance and regulation:** Drafting, evaluating and implementing policies to address societal needs.

Note: Percentages may not sum to 100 due to rounding. Employment figures based on latest available data for this level of sectoral disaggregation from Eurostat (2023).
Source: Implement Economics based on Statistics Finland, Eurostat and OECD.

Most public administration jobs can be complemented by generative AI

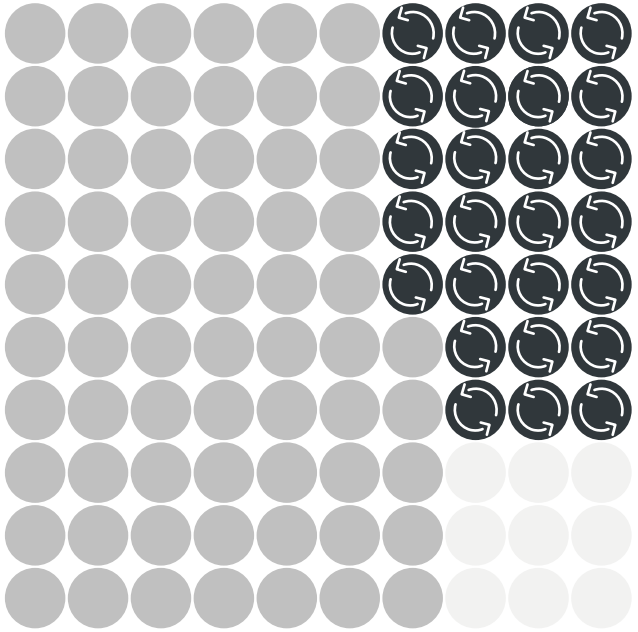
Exposure to automation by generative AI in public administration in Finland
% of jobs in public administration

Partial or full displacement | AI as a complement | No automation

65% or ~100,000 jobs are likely to be augmented by generative AI.

The technology will play an integral role in their daily work, making them more productive and freeing up time for other value-creating activities. This allows resources to be reallocated to areas within the public administration or other parts of the public sector where they are more needed, like in healthcare.

Jobs include social workers, urban planners and general office clerks.



26% or ~40,000 jobs are estimated to be highly exposed to generative AI, leading to some job transitions.

These workers may experience a shift in responsibilities as generative AI automates over half of their tasks, with tools such as citizen facing chatbots handling general inquiries automatically, for example. This improves speed and quality of administrative tasks, saving resources for the central and local governments.

Jobs include citizen service functions, lawyers, and budget analysts.

This is a higher share than observed in other comparable countries due to a higher concentration of administrative office support occupations such as policy administration officials and government social benefits officials, who alone make up 20% of the jobs in Finnish public administration.

9% or ~10,000 jobs in public administration face little or no automation from generative AI.

These workers carry out manual or human-to-human work, including physical maintenance of public infrastructure and on-site inspections to ensure compliance and safety in public spaces.

Human agency is central to AI adoption in the public sector. In Finland, initiatives like AI training by FCAI equip civil servants with essential AI skills, covering fundamentals, applications, ethics, and digital transformation. While these programmes strengthen expertise, further efforts are needed to navigate the challenges and opportunities of generative AI.

Source: Implement Economics based on Statistics Finland, Eurostat, Briggs & Kodnani (2023) and OECD.

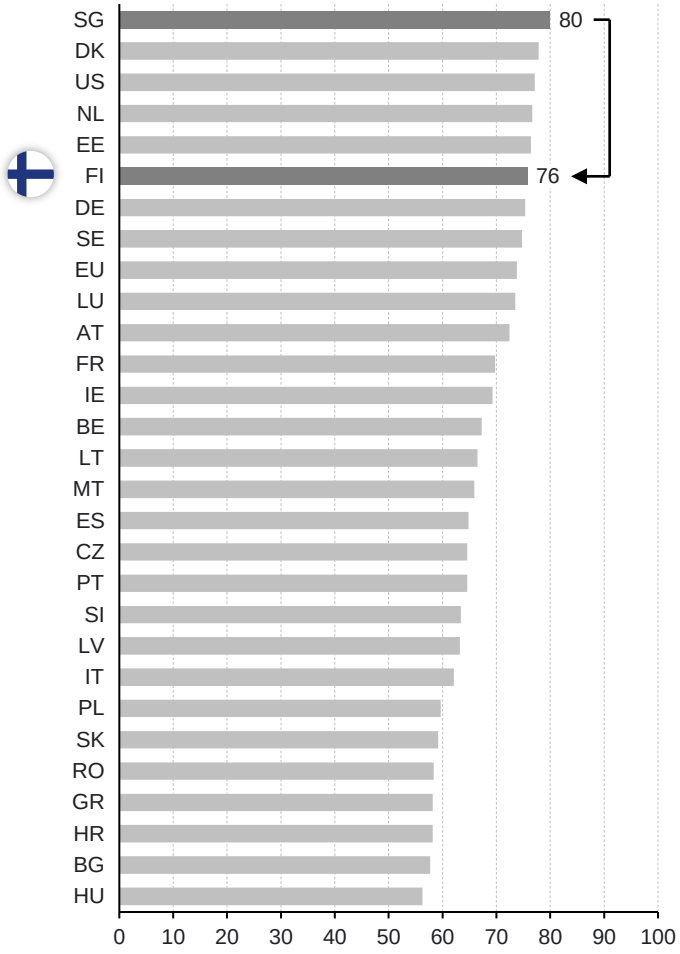
Finland is AI prepared but the government AI strategy is trailing behind

Finland ranks 1st in the European DESI Ranking and scores 91 out of 100 in digital public services for citizens as of 2024. Additionally, the country ranks 6th globally in the IMF AI Preparedness Index.

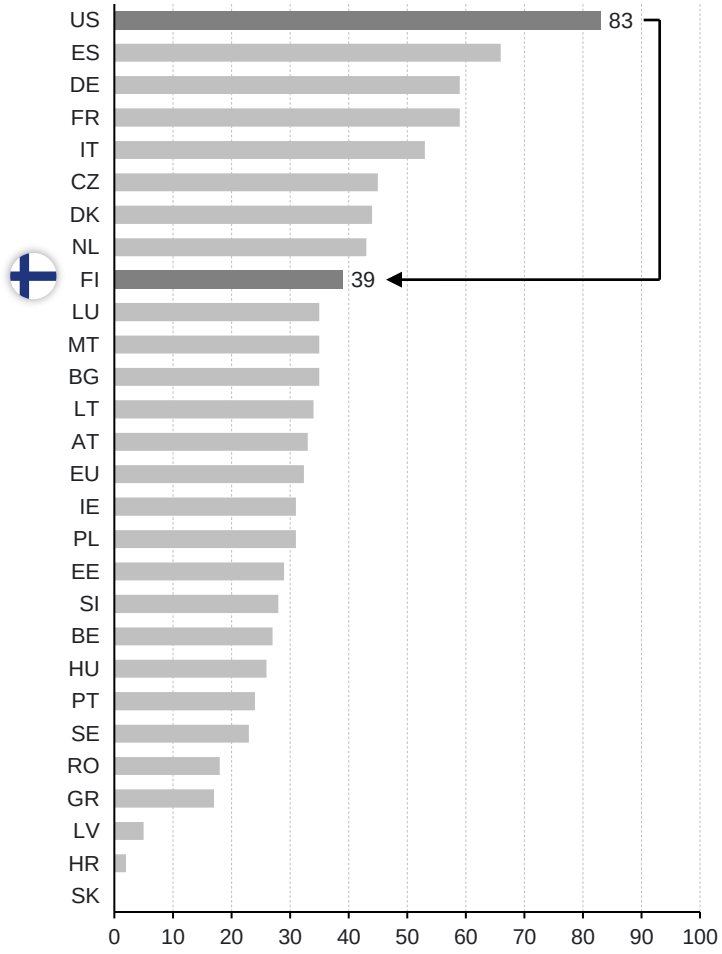
The country also ranks high in the Tortoise Government Strategy index, but is still outranked by European peers. The index measures the depth of commitment from national governments to AI, based on investigating spending commitments and national strategies.

To maintain its leading position, Finland should increase its focus on AI in government.

AI Preparedness Index
IMF, April 2024 (Index max = 100)



AI Capacity Index, Government Strategy
Tortoise, 2024 (Index max = 100, global leader)

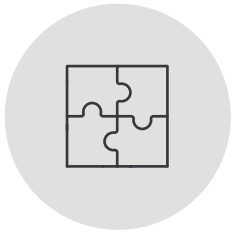


Source: Implement Economics based on the European Commission (2024), IMF and Tortoise Media Global AI Index, 2024.

Five key barriers hamper progress in Finland

This report draws on research from Finland, leading Nordic countries, and the European Commission to identify five key barriers to be overcome for the AI adoption to be successful:

PART I
Making the potential executable



Fragmented decision-making

Fragmented decision-making in government leads to many pilot projects without achieving scalable results

Fear of breaking the rules

Public institutions struggle to use advanced AI tools due to strict regulation and EU compliance requirements

Lack of public support

Implementation of AI solutions in public administration requires support by citizens and employees

PART II
Getting the critical enablers in place

Regulatory uncertainty

Public institutions hesitate to adopt AI tools due to regulatory uncertainties related to cloud computing

A risk of vendor lock-in

Vendor lock-in can cause significant hidden costs for public institutions

This report details solutions to each of the above-mentioned barriers

Think 'task-based'

Think 'risk-conscious'

Think 'impact-oriented'

Create cloud clarity

Make smart procurement choices

Source: Implement Economics based on the EU Commission (2024), Swedish AI Commission (2024), Finnish Ministry of Finance (2024)

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Think 'task-based'

Think 'risk-conscious'

Think 'impact-oriented'

PART I

Making the potential executable

In designing a new national AI strategy, the Finnish government should think **task-based, risk-conscious** and **impact-oriented** to realise the potential of generative AI in public administration.

PART I

Think 'task-based'

- Adopt a task-based framework to achieve scalability in AI solutions.

> *A well-organised and shared data platform can gradually improve data mobility in public administration, facilitating the transition from few and limited use cases and pilots to integrating generative AI at the organisation-wide level.*
>
> Finnish Ministry of Finance (2024)

Fragmented decision-making across government levels leads to numerous pilots with no scalable impact

Despite great opportunity to benefit from AI use in public administration, fragmented decision-making presents three main challenges:

Fragmented governance and isolated investments

Finland's decentralised governance model, where authorities operate independently, has led to fragmented decision-making and uncoordinated investments. Without clear national leadership or a central strategy, resources are diluted across numerous isolated pilots. This approach prevents authorities from leveraging shared successes and scaling AI solutions across the public sector.

Absence of common infrastructure

The lack of shared infrastructure for AI development can result in authorities choosing isolated solutions that are often incompatible with broader systems. This fragmentation is further exacerbated by the absence of open standards and APIs, which could otherwise facilitate interoperability between solutions. Without a unified platform for AI experimentation and deployment, collaboration and resource optimisation remain unattainable.

Barriers to data sharing

Finland has extensive data resources, yet significant legal and technical barriers hinder accessibility and exchange. GDPR, national privacy laws, and inconsistencies in systems and standards create obstacles to data sharing between authorities. As a result, authorities struggle to harness data effectively for AI-driven innovation.

Source: Implement Economics based on Finnish Ministry of Finance (2024), Ministry of Economic Affairs and Employment of Finland (2019), State of Finnish Tech Report 2024, LSE Consulting and Public Health, European Commission.

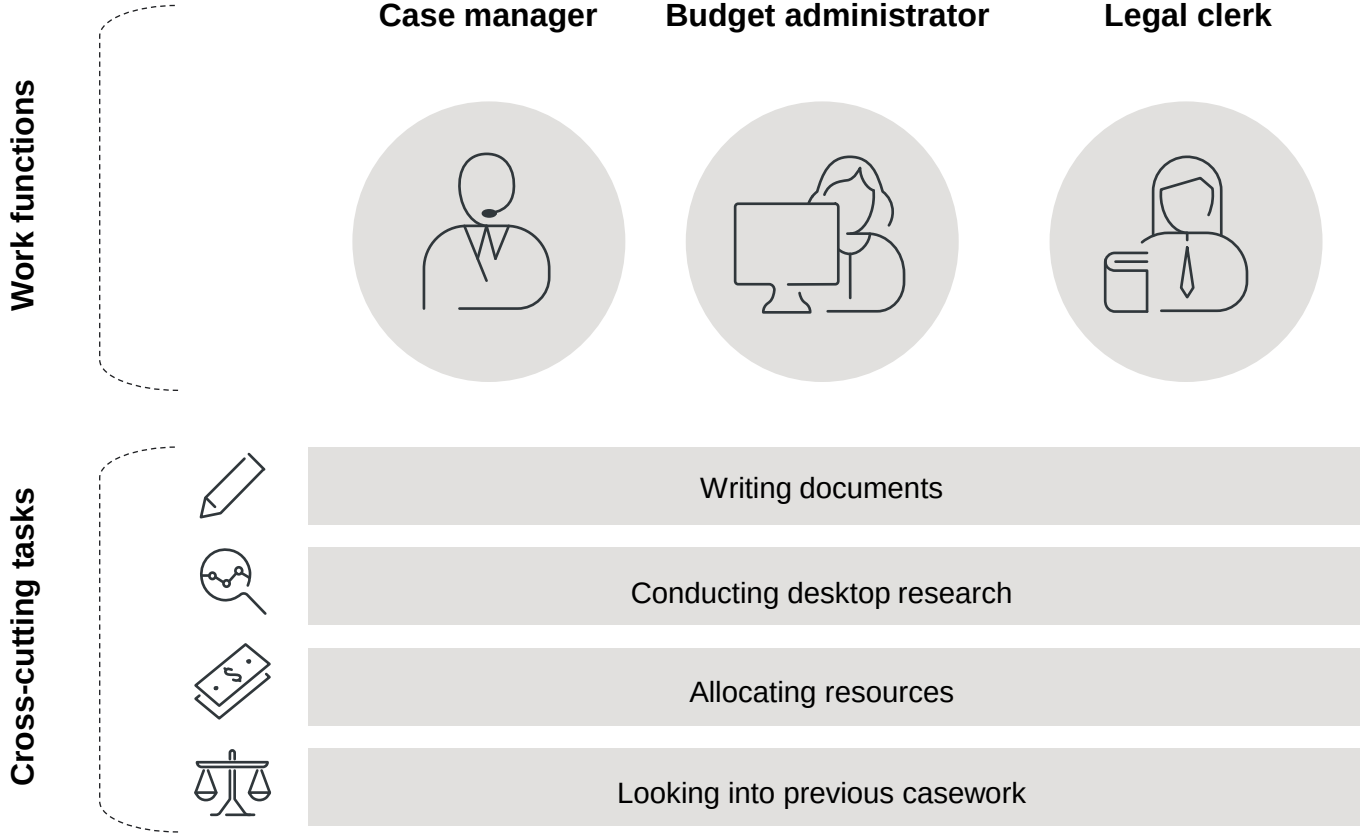
Cross-cutting tasks form the basis of most public administration jobs

The public sector is the largest employer in Finland, with public administration employees making up 17% of the sector. Despite the diversity of the roles and fields of these employees, they carry out similar key tasks that follow comparable processes.

For example, tasks such as case handling are carried out by employees with varying job titles across multiple institutions.

To effectively implement AI in public administration, using a task-based framework that focuses on shared processes is essential for achieving scalable solutions.

Examples of work functions and cross-cutting tasks in public administration



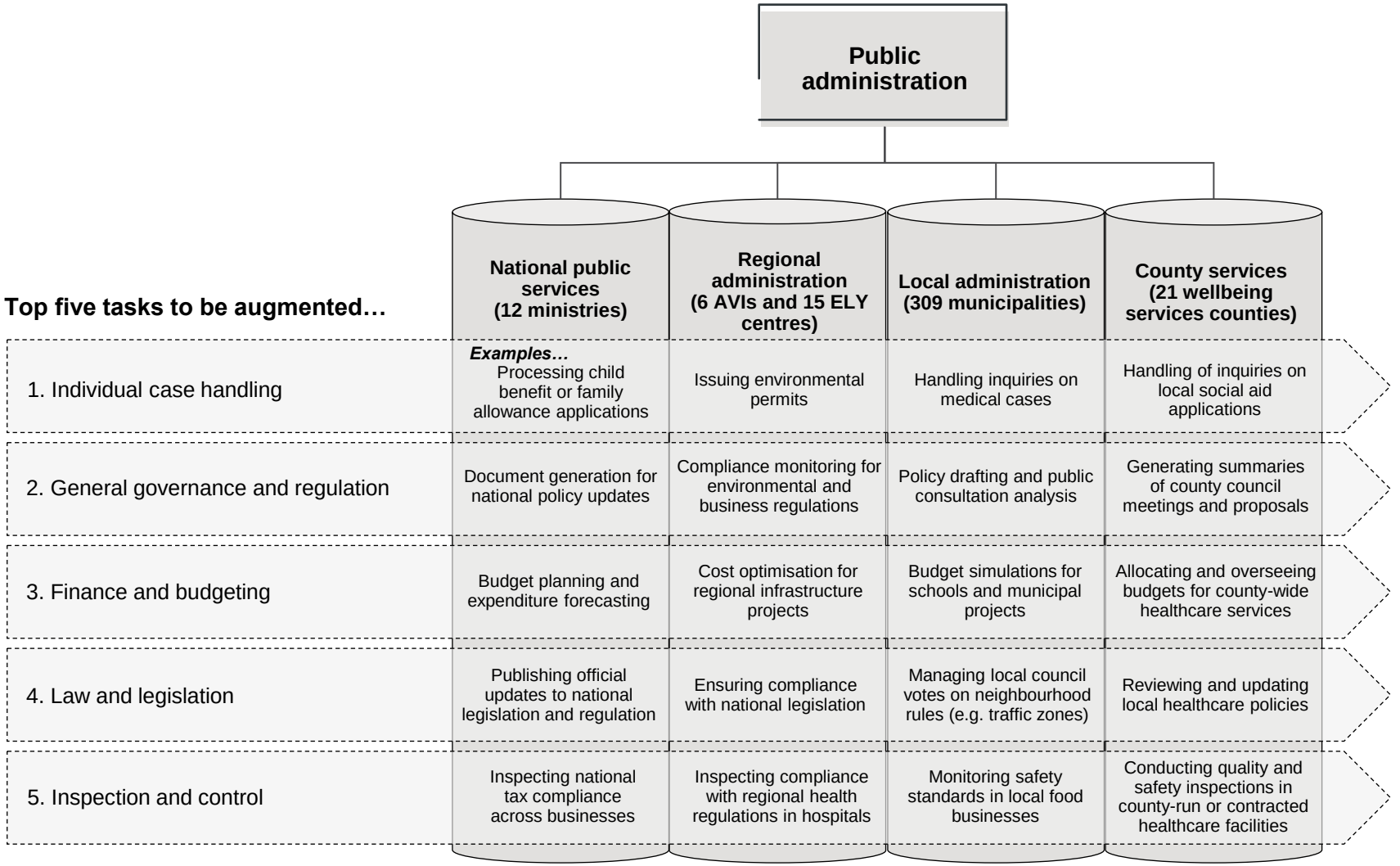
Source: Implement Economics based on Statistics Finland, Eurostat, and O*NET.

Generative AI has the potential to augment tasks performed across all public institutions in Finland

The public sector in Finland consists of the state, regions, and municipalities. Finland is made up of multiple institutional siloes: 12 ministries, 21 regional administrative entities and 309 municipalities. Further, Finland has 21 wellbeing services counties managing health, social and emergency services.

The tasks in public administration hold a large degree of similarity, creating an ideal opportunity to implement scalable AI solutions that can simultaneously benefit multiple public institutions, enhancing efficiency and collaboration.

Structure of the public administration in Finland



Source: Implement Economics based on the European Commission, Eurydice and the Finnish Ministry of Social Affairs and Health.

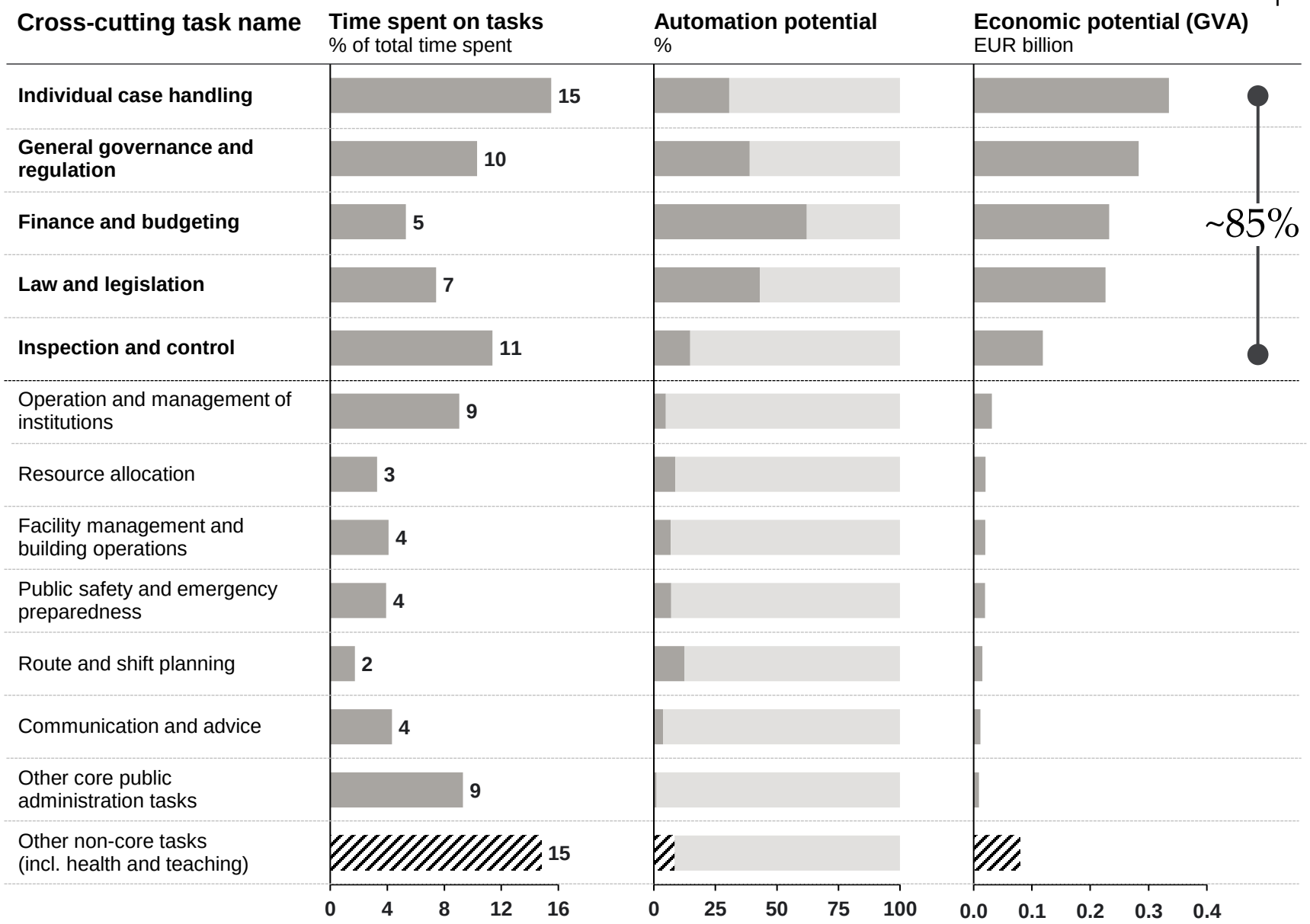
Focusing on the top five cross-cutting tasks could realise 85% of the potential

Implement Economics has analysed the potential of generative AI within public administration on task-level using granular employment data from the Finnish statistical authority and detailed occupation descriptions.

We find that the lion's share of the potential in public administration is found within five large cross-cutting tasks:

- Individual case handling
- General governance and regulation
- Finance and budgeting
- Law and legislation
- Inspection and control

Although these tasks are estimated to make up roughly half of time spent by Finnish civil servants, they account for about 85% of the economic potential due to the high degree of automatability.



Note: Percentages may not sum to 100 due to rounding.There is much uncertainty around the capability and adoption timeline of generative AI. The estimation of the potential of AI across key cross-cutting tasks is based on an augmentation of Briggs & Kodnani (2023) with granular Finnish employment data and an expert-assessed, exhaustive framework of the task composition within public administration, which is mapped to the rich database of task descriptions within O*NET. The automation potential of cross-cutting tasks may vary from country to country due to the occupation composition of the workforce carrying out the tasks.
Source: Implement Economics based on O*NET, Briggs & Kodnani (2023) and Statistics Finland.

Generative AI can complement cross-cutting tasks in several aspects

Individual case handling

Generative AI can review application forms for missing documentation, pinpoint follow-up questions that need the applicant's input, and route cases directly to the relevant department.

General governance and regulation

Generative AI can automatically compare proposed rules against existing legislation to spot potential conflicts or compliance gaps as well as compiling relevant legal precedents to help agencies stay consistent with governance standards.

Finance and budgeting

Generative AI can detect budget overruns, identify potential cost-saving measures, and forecast revenue shortfalls, helping public administrators prioritise spending, optimise resource allocation, and maintain transparent financial oversight.

Law and legislation

Generative AI can assist in drafting legal texts, analysing legislative proposals, and identifying potential legal conflicts, helping lawmakers craft precise and well-aligned policies.

Inspection and control

Generative AI can identify anomalies, flag potential violations, and optimise inspection schedules based on risk. By analysing historical and real-time data, it helps inspectors focus on high-risk cases, streamlining compliance checks and enhancing regulatory enforcement.

Top five cross-cutting tasks with the highest economic potential

Achieving scalability while balancing local needs

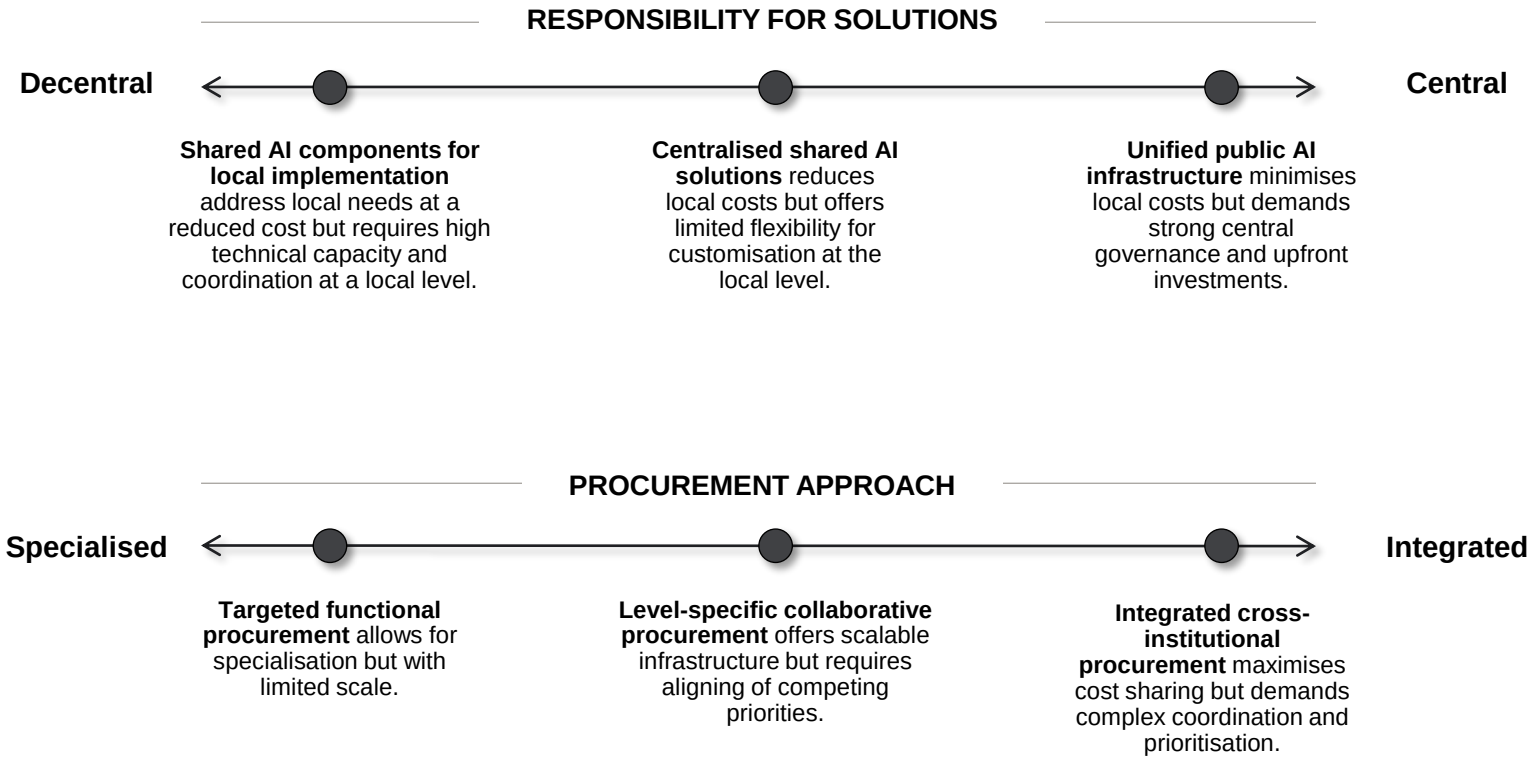
Approximately 85% of the potential lies in the top five key tasks shared across institutions. However, AI solutions must also address local needs to remain effective.

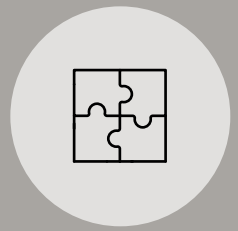
To maximise impact, public administrations should prioritise scalable solutions that avoid duplication while ensuring flexibility to meet local requirements.

The government should clearly define roles and responsibilities across levels of government to ensure alignment with users while maintaining scalability.

To address fragmented decision-making and reduce inefficiencies caused by siloed AI investments, strategic decisions should focus on cross-institutional AI procurement.

Strategic dimensions in public AI procurement





PART I

Think 'risk-conscious'

- Low-risk and internally-oriented use cases can realise 20% of the total AI potential in public administration.

> *When the risks are taken into account and safeguards are set, generative AI can be seen as having significant potential to act as an effective support tool in the work of the authority.*
>
> Finnish Ministry of Finance (2024)

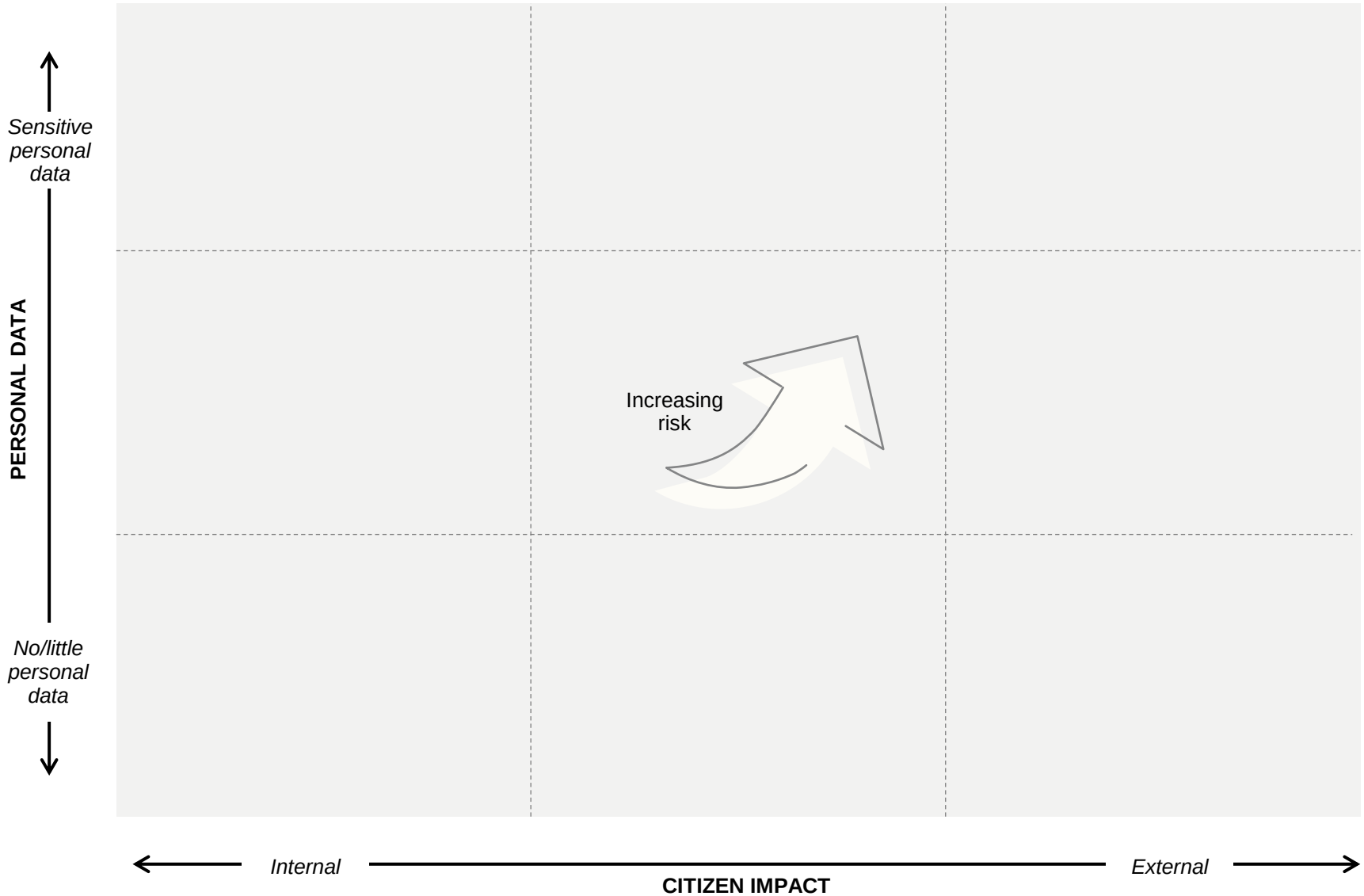
Public institutions are risk-averse and face a complex regulatory landscape

Implementing AI in public institutions is complicated by the existence of overlapping regulations, such as GDPR, the AI Act, and the AI Code of Practice, which creates uncertainty and inaction.

Leaders in public administration are aware of the risks. However, being overly risk-averse or failing to assess risks properly can lead to inaction.

A handful of low-risk applications of AI that do not use personal data and are internally-oriented exist. These are a good place to get started with tangible adoption of AI applications prior to addressing those that both use personal data and are externally-facing.

The regulatory challenges can be understood in terms of two dimensions of risk



Source: Implement Economics based on GDPR EU.

Low-risk AI applications account for 20% of the potential in public administration

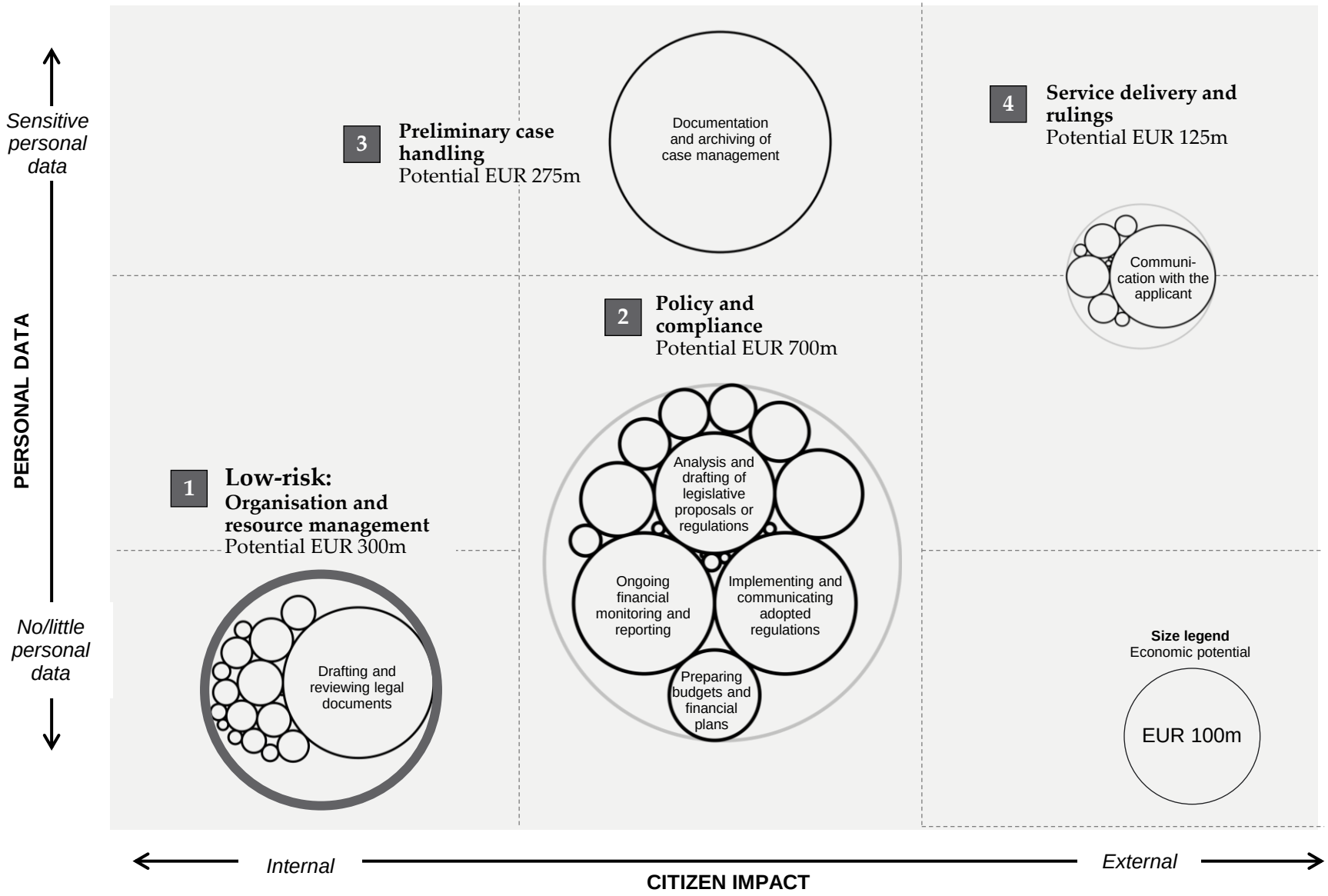
The risks of key cross-cutting tasks are mapped across two dimensions:

- The degree of citizen impact (internally- vs. externally-oriented AI applications)
- The sensitivity and use of personal data

This mapping produces four clusters of potential AI applications that can be used as a roadmap towards AI adoption in public administration:

1. **Organisation and resource management** applications, which are very low risk and should be addressed in the coming years.

   Our analysis shows that **EUR 300 million**, **equivalent to 20%** of the economic potential, lies in these low-risk, internal tasks.
2. **Policy and compliance** applications that use some personal data but are not completely externally-oriented.
3. **Preliminary case handling,** which uses considerable sensitive data but is not directly citizen- and business-facing.
4. **Service-delivery and rulings**, which are directly citizen- and business-facing and use considerable personal data.



Note: The estimation of the potential of AI across key cross-cutting tasks is based on an augmentation of Briggs & Kodnani (2023) with granular Finnish employment data and an expert-assessed, exhaustive framework of the task composition within public administration, which is mapped to the rich database of task descriptions within O*NET.
Source: Implement Economics based on O*NET, Briggs & Kodnani (2023) and Statistics Finland.

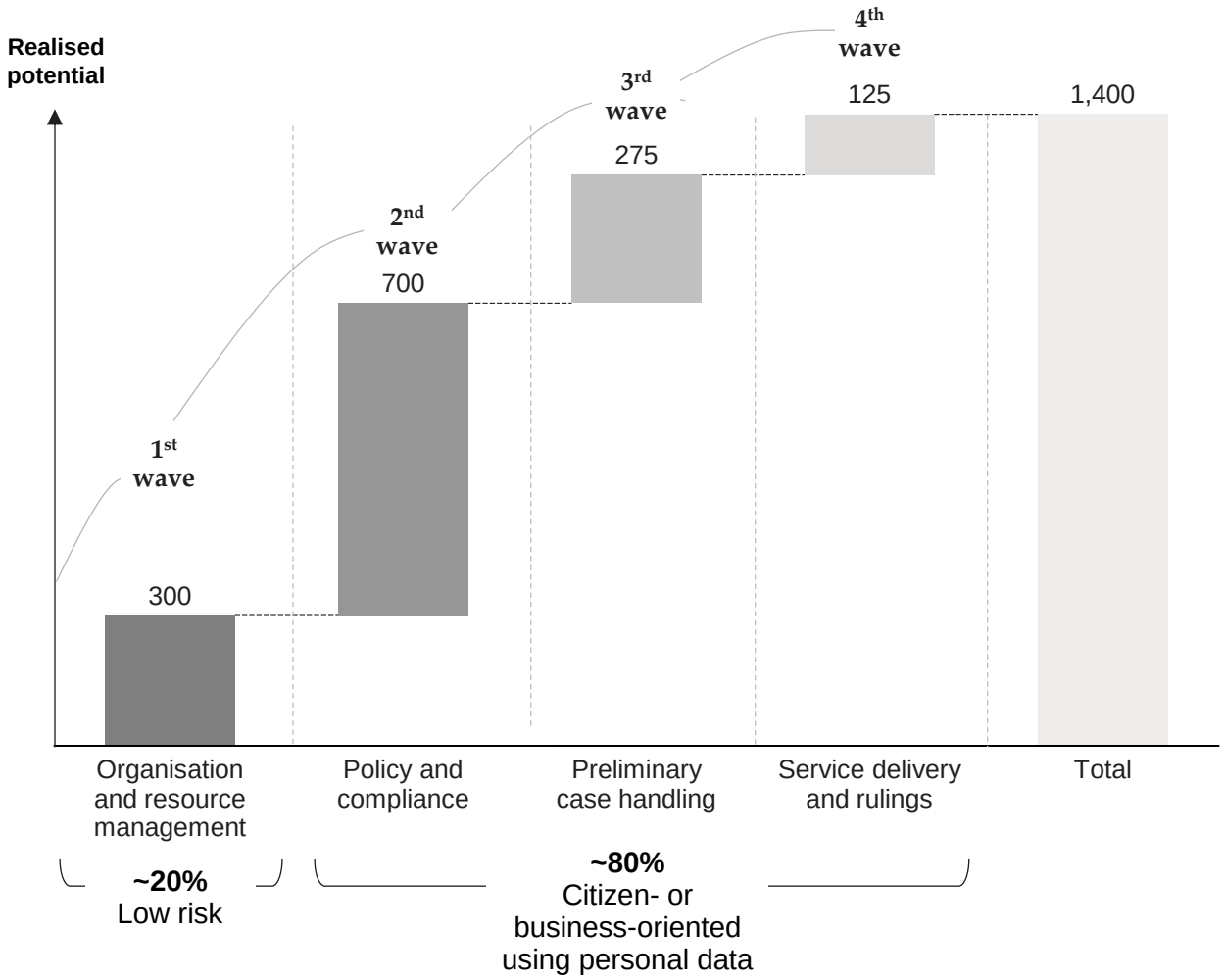
Start with the lowest risk and work up to tasks with high citizen impact

In a first wave, public authorities could consider implementing low-risk, internal AI applications that do not involve sensitive data. These initiatives offer valuable learning experiences and develop AI capabilities needed for more complex, external-facing solutions.

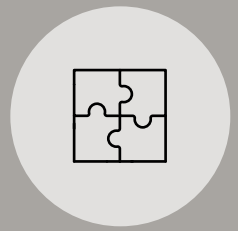
Simultaneously, the central government should ensure that critical enablers are in place to begin adoption of the 2nd and subsequent waves of advanced AI applications, which make up the remaining ~80% of the potential.

While the greatest immediate potential for AI in public administration lies within internal administrative processes, the broader application of AI in citizen- and business-facing services holds transformative potential for the public sector as a whole.

Potential value creation from generative AI in public administration in Finland
EUR million at widespread adoption



Note: There is much uncertainty around the capability and adoption timeline of generative AI. The estimation of the potential of AI across key cross-cutting tasks is based on an augmentation of Briggs & Kodnani (2023) with granular Finnish employment data and an expert-assessed, exhaustive framework of the task composition within public administration, which is mapped to the rich database of task descriptions within O*NET. Our estimate is the isolated potential of generative AI at widespread adoption. The estimated boost from generative AI may not be fully additive to growth projections.
Source: Implement Economics based on Statistics Finland, O*NET, and Briggs and Kodnani (2023).



PART I

Think 'impact-oriented'

- Use cases directly or indirectly impacting citizens or businesses constitute ~80% of the AI potential in public administration

> *By personalising interactions, generative AI can adjust responses based on user needs, ensuring that citizens receive the most relevant and timely information. This approach enhances the user experience while reducing the administrative workload of civil servants.*
>
> Finnish Ministry of Finance (2024)

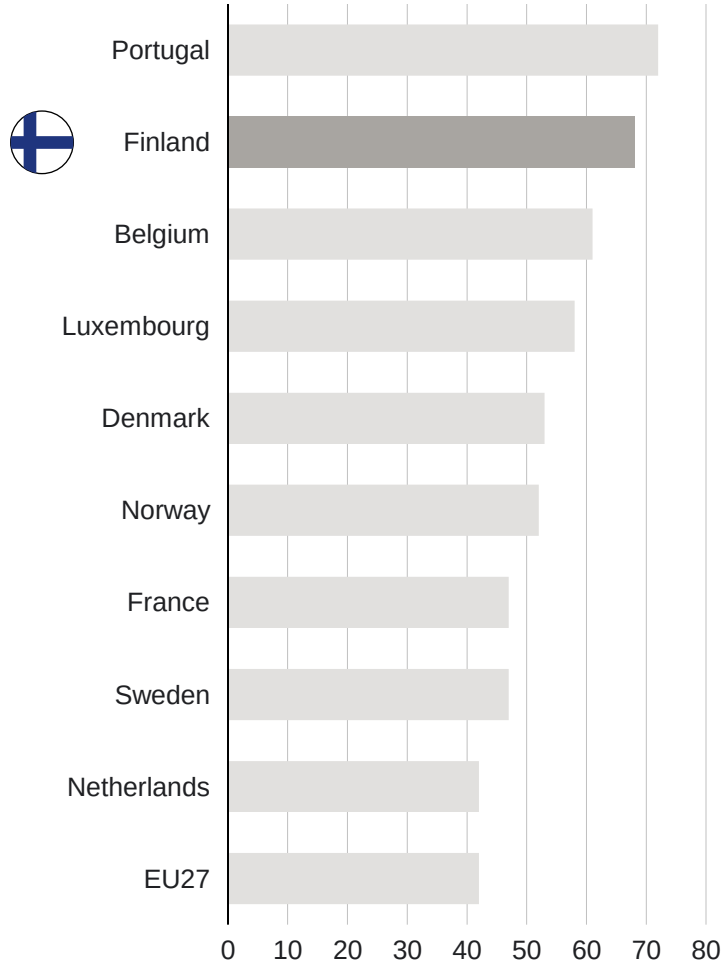
The citizens of Finland trust the use of AI in government processes

The majority of Finnish citizens (68%) support the use of AI in public administration to enhance productivity.

Further, 76% of workers across Finland believe that generative AI tools will increase their productivity. This rises to 86% for office workers.

To ensure employee confidence and public support, public institutions in Finland must implement AI solutions with clear benefits to citizens and businesses, rather than just technical or cost-cutting advantages.

Support in the use of AI to improve government processes
%



76%

…of workers across Finland think that generative **AI tools will help them be more productive.**

86%

…of **office workers** think this is the case.

Note: The respondents were asked whether they support AI tools being used to help process government and customer service requests faster.
Source: Implement Economics based on survey data from Public First on behalf of Google.

Generative AI can save time and hassle for citizens when interacting with public administration

By integrating generative AI into public administration, services can become faster, smarter and more accessible for citizens

Citizens

Examples of interactions	Examples of how generative AI can improve interactions
Applying for personal identification documents - e.g. passport, ID cards or driving license.	Generative AI can guide citizens through the application process, providing personalised instructions and automatically pre-filling forms.
Registering life events – e.g. births, deaths, marriages or changes in civil status.	Generative AI can help streamline data entry by auto-updating civil registries across systems, reducing delays for citizens.
Accessing social benefits – e.g. applying for unemployment benefits, pensions or housing assistance.	Generative AI can evaluate applications faster by analysing eligibility criteria, ensuring quicker benefit payouts.
Paying taxes – e.g. managing property and income tax payments or filing annual tax returns etc.	Generative AI can review pre-filled tax forms for compliance, flag errors, and suggest corrections before filing.
Enrolling in public education – registering children for day care, schools or applying for student loans.	Generative AI can create tailored school recommendations, efficiently analysing applications and citizen needs, and optimising capacity.
Address changes or housing permits – e.g. notification of move or applying for building permits.	Generative AI can pre-fill forms and create suggestions for required documentation, reducing citizen effort.
Voting and civic participation – casting ballots or attending public hearings.	Generative AI can summarise election materials and help citizens register easily.
Resolving disputes or fines – e.g. appealing decisions, paying traffic fines or addressing legal issues.	Generative AI can process and draft legal documents, reducing wait times for citizens seeking resolution.

Generative AI can simplify businesses interactions with public administration

By assisting in documentation, reporting and application processes, generative AI can save time and money for businesses when interacting with public administration

Businesses

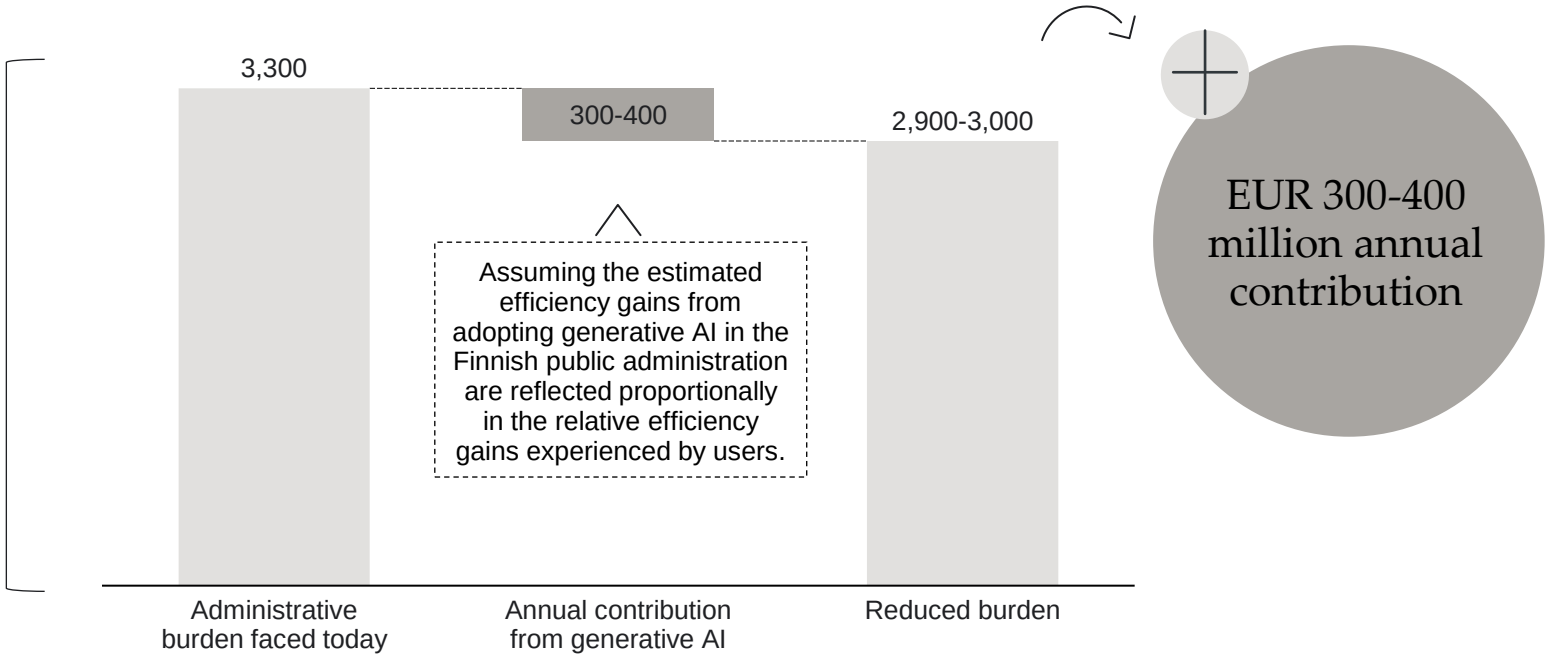
Examples of interactions	Examples of how generative AI can improve interactions
Applying for government contracts – e.g. submitting tenders or meeting compliance criteria.	Generative AI can provide tailored templates and compliance checklists to streamline bid preparation.
Obtaining or renewing permits – e.g. applying for operating licences, construction permits, or health and safety certifications.	Generative AI can act as a virtual assistant, guiding users through form completion.
Applying for financial support – e.g. grants, subsidies, innovation funding, or support programmes.	Generative AI can streamline funding applications by suggesting tailored inputs and ensuring alignment with programme criteria.
Claiming financial rebates – e.g. claiming tax refunds or rebates.	Generative AI can analyse receipts and flag eligible expenses, helping businesses maximise their rebate potential.
Filing regulatory compliance reports – e.g. submitting required reports for business operations or audits.	Generative AI can automate report creation, transforming raw data into polished submissions.
Collaboration with employment services – e.g. accessing pool of jobseekers and participation in subsidised upskilling programmes.	Generative AI can bridge the gap between businesses and jobseekers by matching skills to needs.
Navigating pre-qualification processes – e.g. completing steps to demonstrate eligibility for specific programmes or services.	Generative AI can simplify eligibility checks, offering step-by-step guidance and pre-screening data for quick approvals.
Submitting applications for certifications – e.g. applying for professional, compliance, or operational certifications.	Generative AI can help businesses assemble the perfect submission, identifying key documents and formatting tips.

Generative AI can reduce Finnish companies' administrative burden by EUR 300-400 million

Finnish companies are facing a significant administrative burden defined as the effort required to supply mandatory information under national and EU laws and regulations. Generative AI has the potential to significantly reduce this burden.

Administrative burden faced by Finnish companies
EUR million at widespread adoption

1.2%
of GDP
Administrative burden for Finnish companies



Perspective

Beyond administrative cost savings, generative AI in public administration is expected to bring additional business impacts, such as:

- Freeing up resources for other value creating tasks.
- More efficient allocation of resources.
- Increased speed and flexibility in company processes.

Note: There is much uncertainty around the capability and adoption timeline of generative AI. The estimation of the potential of AI across key cross-cutting tasks is based on an augmentation of Briggs & Kodnani (2023) with granular Finnish employment data and an expert-assessed, exhaustive framework of the task composition within public administration, which is mapped to the rich database of task descriptions within O*NET. Our estimate is the isolated potential of generative AI at widespread adoption. The estimated boost from generative AI may not be fully additive to projections. The estimates of the total administrative burden are based on Julkishallinnon tarkastusvirasto (2014). While the study is old, the estimate aligns with recent studies for comparable countries, e.g. Growth Agency, Statistics Sweden.
Source: Implement Economics based on Eurostat, Julkishallinnon tarkastusvirasto (2014), O*NET and own calculations.

Case: The Finnish Patent and Registration Office has been able to meet increased application inflows by deploying an AI solution for prior art searches, reducing both workloads and waiting times

The challenge

- Increasing patent submissions strained manual review processes.
- Traditional classification and prior art searches caused delays.
- Variability in human assessments led to inconsistencies.

The solution

- An AI tool classifies patent documents and conducts prior art searches across extensive global databases.
- The solution further ensures that similar applications are treated consistently.

The impact

- Standardised assessments of applications improve decision quality.
- PRH can reallocate examiner capacity to meet growing demand.
- Faster response times to applicants.

Note: Most use cases implemented are supported by other initiatives, an important consideration when evaluating their overall impact.
Source: Implement Economics based on Finish Patent and registration Office (2023).

Case: The Swedish Tax Agency has reduced waiting time on business registrations by 3.5 days, and an AI-powered chatbot is handling about 50% of its conversations outside opening hours

The challenge

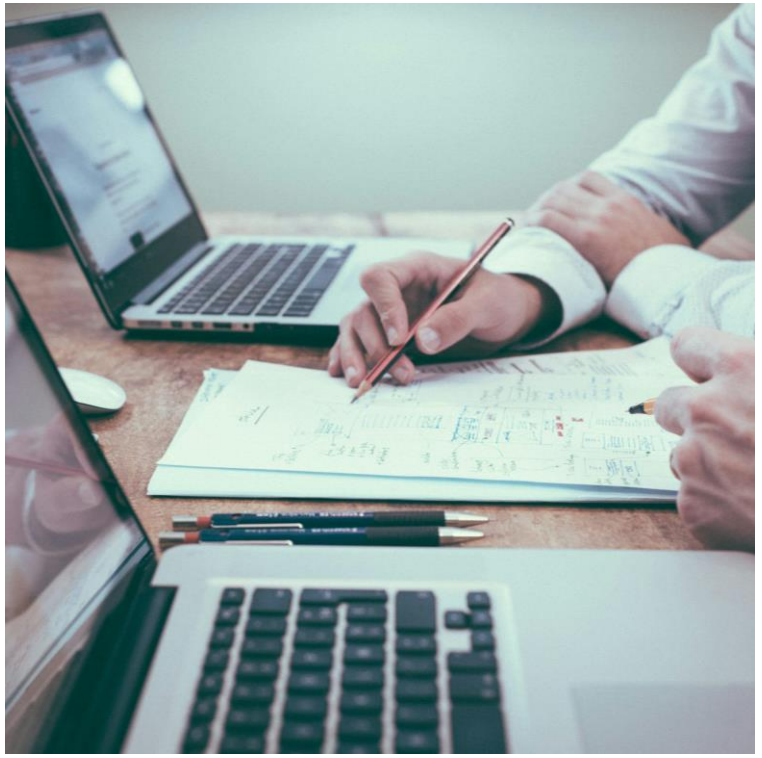
- Long waiting times on phone and e-mail.
- Citizens and businesses could only contact during opening hours 9-15.
- Bottlenecks during tax deadlines.

The solution

- Almost 30 AI services deployed.
- AI chatbot answering tax and personal record questions.
- 24/7 service to assist citizens and businesses anytime.

The impact

- Chatbot handling ~500,000 conversations annually.
- ~50% of chatbot conversations answered outside opening hours.
- Waiting time for business registrations reduced by ~3.5 days.



Note: Most use cases implemented are supported by other initiatives, an important consideration when evaluating their overall impact.
Source: Implement Economics based on the Swedish AI Commission (2024) and Skatteverket Annual Report 2022 (2023).

Case: In Belgium, 92% of users are satisfied with the service from an AI-powered recruitment solution improving job matching and saving time for citizens

The challenge

- Skills gap between workforce and employers' needs.
- Traditional recruitment process is time consuming and resource intensive.
- Lack of personalisation and customisation in job suggestions.

The solution

- AI generated suggestions for upskilling and training.
- Map out where there is the highest probability of finding work.
- Extensive personalisation and pre-filling of questionnaires.

The impact

- 92% of citizens are satisfied with their contact with the job centre (VDAB).
- 80% reduction in time spent on job-match questionnaires.

Note: Most use cases implemented are supported by other initiatives, an important consideration when evaluating their overall impact.
Source: Implement Economics based on VDAB annual report (2023) and Superlinear and VDAB reinvent orientation test with Artificial Intelligence.

Case: Digital case handling has reduced waiting time on building permits for companies and citizens by more than 40% in Denmark's Municipality of Copenhagen

The challenge

- Long waiting times on building permits.
- Complex legislation.
- Rising stock of unhandled cases.

The solution

- An AI assistant is used to navigate complex legislation.
- Documents drafted for case handlers using generative AI.
- Robots automatically execute parts of the case handling.

The impact

- Waiting time reduced by 4.5 months (more than 40%).
- Stock of unhandled cases reduced by more than 70%.
- Released time spent on guiding applicants in the most complex cases.

Note: Most use cases implemented are supported by other initiatives, an important consideration when evaluating their overall impact.
Source: Implement Economics based on Københavns Kommune (2023).

Case: Estonia has a bold vision for generative AI, and currently citizens and companies can use Bürokratt, a network of virtual assistants providing six different services across eight institutions

The ambition

- 90% of citizen requests should be handled by virtual assistants in 2026.
- 70% reduction of citizens' administrative burden by 2030.
- Digital government should be cloud-native by 2030.

The solution

- A network of virtual assistants built on a scalable architecture.
- Modular development based on continuous citizen feedback.
- Data security and privacy by design using a common data infrastructure.

The impact

- Six different services across eight institutions.
- Multichannel virtual assistants can be accessed via voice and text.
- Private developers can integrate and extend Bürokratt's capabilities.

Note: Most use cases implemented are supported by other initiatives, an important consideration when evaluating their overall impact.
Source: Implement Economics based on Estonia's Ministry of Economic Affairs and Communications (2024).

Summary

In designing a new national AI strategy, the Finnish government should think …

'Task-based' > Prioritise cross-cutting tasks to achieve economies of scale while addressing local needs. Implement a cross-institutional AI procurement strategy with clear roles and responsibilities across government levels to ensure user alignment and scalability.

‘Risk-conscious’ > Begin with low-risk and internally-facing AI solutions and gradually move on to more user-sensitive and externally-facing AI applications that can realise the bulk of the potential.

‘Impact-oriented’ > Concentrate on AI applications with real user impacts, i.e. solutions that reduce the time and hassle of citizens’ and businesses’ interactions with public administration.

Create cloud clarity

Make smart procurement choices

PART II

Getting the critical enablers in place

Public administrations need to address critical barriers to enable the opportunity of generative AI

To benefit from state-of-the-art AI solutions, public administration relies on…

Smart regulations

AI adoption at scale requires simplified rules and harmonised implementation

- **Simpler, light, faster.** Simplified rules and legal certainty are key enablers of AI adoption, as highlighted by the Competitiveness Compass.
- **Ethical guidelines.** AI systems must adhere to principles of transparency, fairness, and accountability to maintain public trust.
- **Interoperability standards.** Harmonised rules across jurisdictions ensure AI solutions can be implemented seamlessly at scale.
- **Focused on outputs.** Regulation should target AI outputs, ensuring quality while preventing harm.

Data

AI needs data and the ability to combine data from different sources

- **High-quality data is essential** for developing and running high-performing AI models.
- **Workflow data must be accessible** to support employees in their daily operations.
- **Data-sharing frameworks.** Mechanisms should facilitate safe and efficient data exchange across government entities and private partners.

Infrastructure and tools

AI builds on large models, tailored tools, computing power and data storage

- **Computing resources.** Cloud services providing computing power and storage capacity to develop and run AI models.
- **Advanced AI models.** Large language models that are released at regular intervals, for example Gemini from Google or Open AI's GPTs.
- **AI platforms and tools.** These are often developed from the large language models. These enable public administrations to integrate AI into their processes and services.
- **AI applications.** Ready-to-use cloud solutions delivered via platforms.

Skills

AI works with humans, and public employees need the skills to work effectively with AI

- **Broad AI competencies** are essential for civil servants to understand when and how to use AI. From a management perspective, effective change management is crucial for successful adoption.
- **Specialised expertise and cross-disciplinary teamwork.** Building capacity for AI roles such as data scientists and ML engineers while fostering collaboration between IT, legal, and policy departments to ensure effective AI integration.
- **IT procurement competence.** Strong capacity of procurement professionals to navigate the complexities of AI and multi-cloud technologies.

…yet two key barriers must be overcome to enable effective generative AI adoption in public administration:

Regulations create uncertainties around data usage and cloud computing

Specialised IT-requirements lead to a risk of vendor lock in

These two barriers are addressed on the next pages.

Source: Implement Economics based on The European AI Commission (2024) and Draghi (2024).

PART II

Create cloud clarity

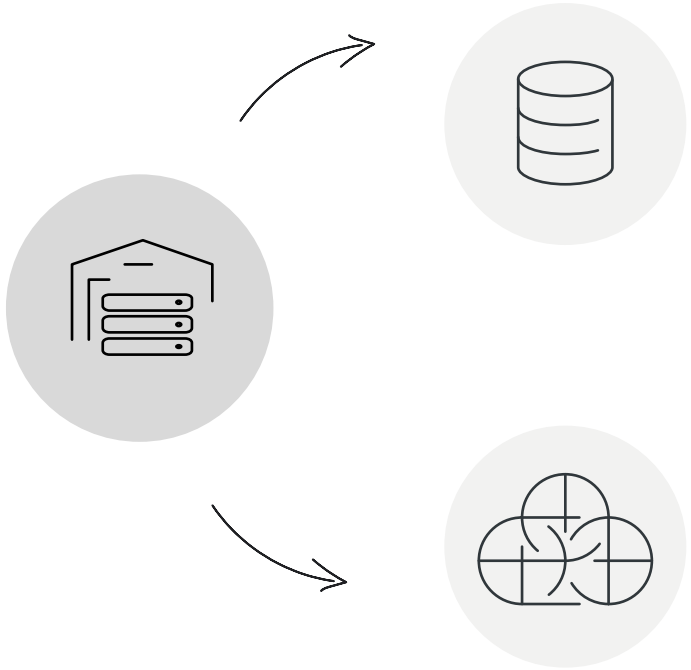
- Privacy and security concerns can lead to a misconceived preference for on-prem solutions.

> *Cloud services and their utilisation are a key part of promoting the digitalisation of public administration and a means of improving productivity. When developing and planning services, it must be taken into account that cloud services and cloud service technology will be the only alternative service model in many cases in the future.*
>
> Finnish Ministry of Finance (2024)

Public authorities face uncertainty in AI adoption due to conflicting EU data and cloud regulations

The EU enforces strict regulations to safeguard privacy and protect individual rights in AI and data usage…

EU regulations, such as GDPR and the AI Act, are designed to safeguard citizens' rights by enforcing strict compliance on personal data protection and ethical AI use, ensuring transparency, accountability, and fairness in digital systems.



…however, the complexity of these rules creates uncertainty, hindering public authorities from adopting AI solutions.

Lack of clarity around data usage. The lack of clear guidelines on data use and inter-agency sharing creates hesitation, delaying innovation, and contributes to a fragmented AI landscape.

Uncertainty around cloud-based solutions. Fragmented and complex rules with unclear interpretations make it difficult for authorities to know whether widely used cloud infrastructure meets legal obligations. This lack of clarity often results in hesitation, costly delays, and the adoption of suboptimal solutions.

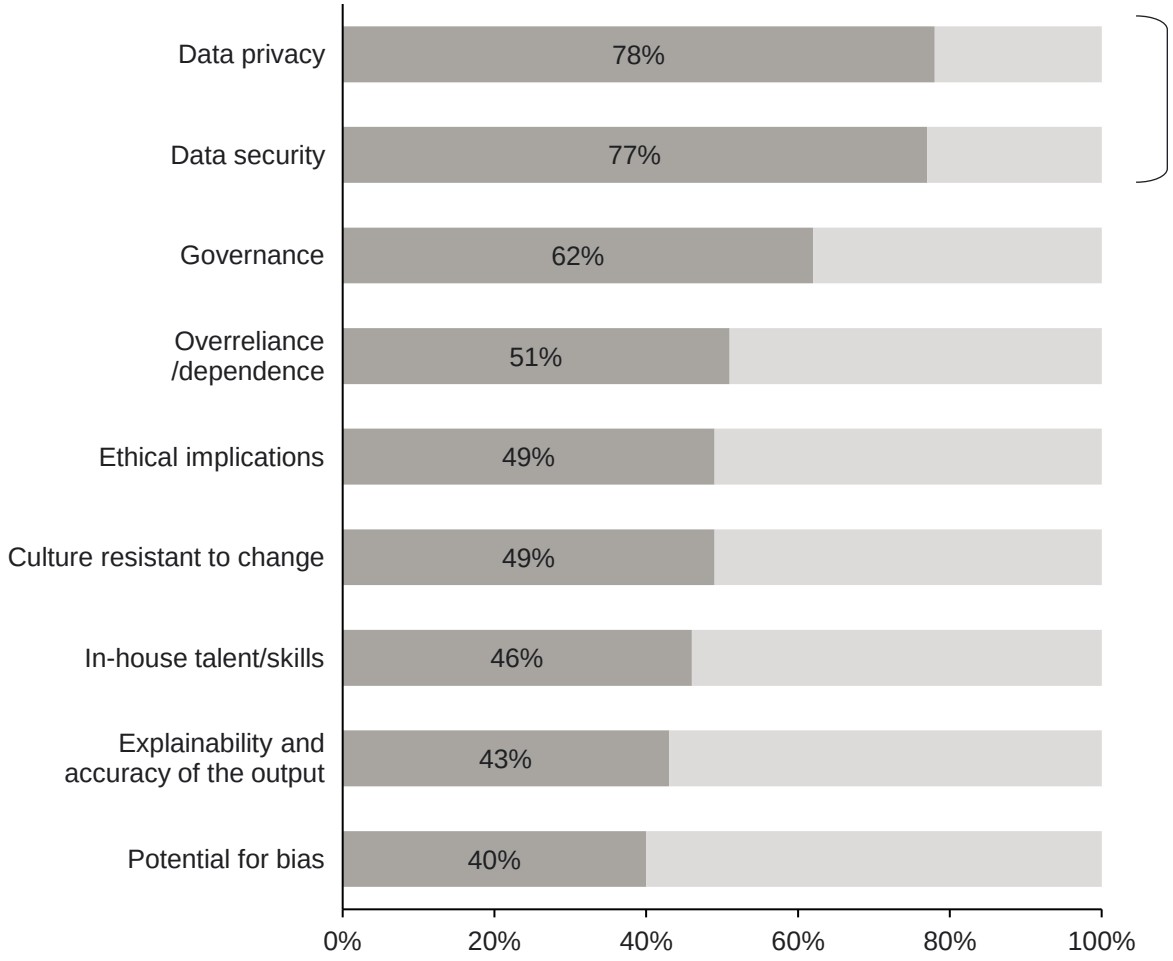
Source: Implement Economics based on the European Commision (2024).

Authorities hesitate to adopt AI tools due to concerns over data privacy and security

European organisations are concerned about leveraging cloud-based AI tools and sharing data across multiple stakeholders due to stringent data privacy and security regulations.

However, sovereign cloud solutions like Google Cloud can address these challenges by ensuring data, operational, and software sovereignty, enabling secure data collaboration while maintaining compliance with European standards.

What are your concerns regarding the usage of generative AI in your organisation?
% of respondents among government leaders globally



This highlights the critical role of AI infrastructure and tools in scaling generative AI solutions and emphasises the need for proactive strategies to ensure responsible use.

Note: The survey was conducted by Coleman Parkes from February to April 2024, targeting 1,600 decision-makers in generative AI strategy or data analytics across government organisations and other key sectors globally. The results shown specifically reflect responses from government organisation respondents.
Source: Implement Economics based on SAS Institute (2024).

A secure and competitive cloud infrastructure is crucial for AI use at scale

AI infrastructure for public sector must be:

- **Efficiently scalable,** accommodating new solutions and fluctuations in demand.
- **Adaptable,** integrating emerging leading technologies and capable of operating on a multi-cloud level.
- **Secure,** ensuring data privacy and leveraging best-in-class cybersecurity capabilities to protect against the evolving threat landscape.
- **Interoperable**, enabling seamless collaboration and data exchange between authorities.

Given the high computational and specialised hardware requirements for state-of-the-art AI, adapting on-premise supercomputers is both prohibitively expensive and inefficient.

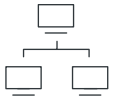
Widespread AI adoption in public administration depends on a secure, robust cloud infrastructure that meets these unique demands. Therefore, the most cost-efficient and scalable solutions are best sourced from specialised suppliers.

To achieve scalability, adaptability, security and interoperability the AI infrastructure must provide:

Compute capacity

Leading AI models

Data storage and pipelines



Network and connectivity

AI tools and applications

Security measures and monitoring

Finland's cloud-first strategy for 2024 emphasises leveraging cloud services to drive AI adoption in public administration. While the government prioritises national cloud solutions, with Valtori as the key provider, scaling public AI will require both substantial computing capacity and access to other core AI infrastructure. A secure and flexible multicloud setup, supplementing Valtori with other vendors, will be essential to effectively support AI across public administration while maintaining a strong national foundation.

Additionally, the challenges associated with accurately assessing risks from foreign cloud vendors further complicates cloud adoption for public authorities.

Source: Implement Economics based on Finnish Ministry of Finance (2024)

Cloud provides a cost-effective AI infrastructure adaptable to technological advancements

To effectively use generative AI in public administration, substantial computing resources are needed.

On-premise infrastructure demands significant upfront investment and risks becoming outdated before costs are recovered, locking institutions into current technology levels.

In contrast, cloud infrastructure offers flexibility, lower initial costs, and scalable usage, allowing continuous adoption of new technologies.

These developments reflect the price of modern, high-end computing power and the increasing computing needs of LLMs – prior to these developments, the long-term viability of on-premise computing may have exceeded those of cloud.

160%

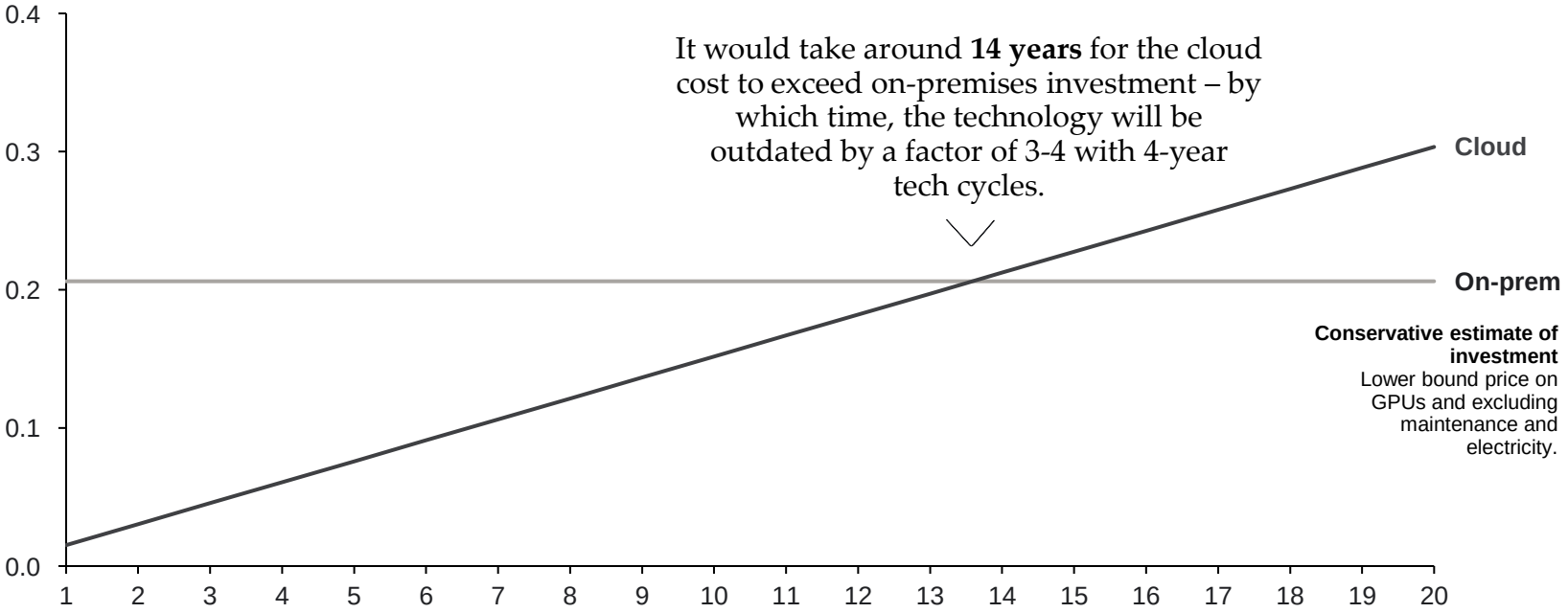
Computer performance has improved by 160% in around two years, and AI is a fast-evolving technology that will require constant updates to compute capacity.

Illustrative example Finnish Tax Chatbot

The Finnish Tax Authority is estimated to handle around **1.8 million citizen inquiries** each year. These could be automated by an AI based chatbot, either in the cloud or on-premise.

~20 GPUs are needed to handle the average flow of requests, costing around of EUR 210,000 for on-prem investment, compared to an average annual cost of EUR 15,000 for a cloud service.

Accumulated costs for chatbot implementation (illustrative)
EUR million



Note: It is assumed that there are 320 inquires per 1,000 person. Inquiries are assumed to be evenly distributed across 16 hours a day and every day of the year, resulting in a constant load throughout the year. Each inquiry is estimated to average 750 words, with approximately two tokens per word, leading to a total of approximately 2.7 billion tokens per year based on an annual volume of 1.8 million inquiries. For cloud-based deployment, the cost is estimated at EUR 15,000 per year, derived from token processing and computational resource usage. For an on-premises setup, it is assumed that 1.8 million inquiries per year translate to an average of 5.2 active conversations per minute, assuming an even distribution 16 hours a day every week. Each active conversation requires four GPUs, and the estimated cost per high-end GPU, including VRAM and hardware, is EUR 10.000. This brings the total on-premises cost to approximately EUR 210,000. Achieving adequate performance for Finnish-language processing would require a large language model, such as Llama70B, which demands 123 GB of VRAM per GPU for effective operation.
Source: Implement Economics based on OpenAI and Llama.

Cloud provides the essential flexibility to scale with fluctuating demands

The demand for public AI applications varies significantly throughout the day and year. During peak periods, a high volume of tasks must be handled simultaneously, placing substantial pressure on AI infrastructure.

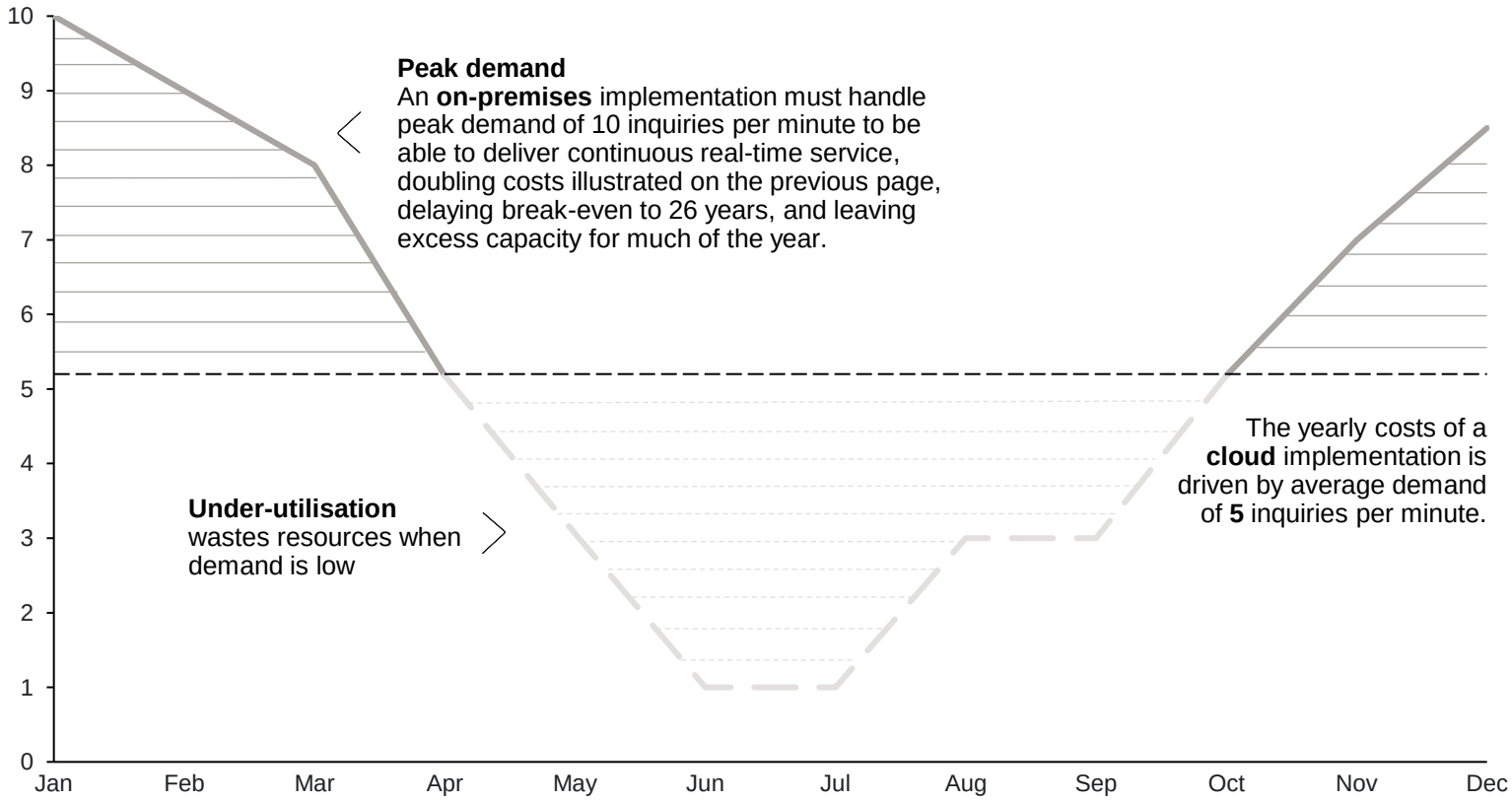
Cloud solutions offer flexible scalability, with costs tied to actual usage.

In contrast, an on-premises setup requires investment not only for average demand but also for peak capacity to avoid bottlenecks.

> *The inherent advantages of cloud services are scalability, adaptability, flexibility, and innovation.*
>
> Finnish Ministry of Finance (2024)

Example Finnish Tax Chatbot

Inquiries per month (illustrative)
Average inquiries per minute



Establish clear regulatory guidance and procurement practices for data sharing and using cloud-based tools to unlock the AI potential

Finland's Government Cloud Service Policies (2024) support EU/EEA-centric cloud adoption, risk-based data sharing, and interoperability but lack a unified framework for consistent implementation across all levels of public administration. Enhancing central coordination and establishing clear standards should ensure digital sovereignty, business continuation, and data protection in the public procurement and adoption of cloud-based tools and infrastructure.

Expand the centralised cloud strategy. Ensure the Government Cloud Service Policies apply consistently to all levels of administration, including local and regional entities. Centralised procurement guidance will ensure that security and compliance standards are universally applied.

Ensure flexibility and resilience. Central government should adopt flexible procurement strategies to avoid overreliance on any single cloud provider. It should define robust contract terms – including exit strategies, data portability, encryption, and audit rights – to protect critical public services. Monitoring subscription and licence costs is key to maintain resilience and prevents paying for unnecessary functionalities.

Safeguard digital sovereignty, interoperability, and resilience. The current Government Cloud Service Policies should enforce robust standards for data exchange and interoperability, ensuring that critical public services remain continuously available. By clarifying data localisation requirements while encouraging cross-border collaboration, Finland can safeguard sovereignty, foster innovation, and protect national interests.

Conduct and update risk assessments. Mitigate risks through government-wide risk assessments, evaluating sovereignty, service continuity, data protection, cost, and innovation. Regularly update assessments for all cloud services, adapting to evolving risks.

Source: Implement Economics based on Algemene Rekenkamer (2025) and Finnish Ministry of Finance (2024).

PART II

Make smart procurement choices

To adopt AI at scale, the Finnish government needs to re-invent the way they procure digital services to ensure flexibility, innovation and competition

It is essential to establish close cooperation between public and private sectors in the work to promote digitalisation of business operations and the use of AI

Ministry of Economic Affairs and Employment of Finland (2019)

Restrictive licensing terms hold back vendor switching

Public institutions frequently use specialised IT systems designed for specific needs, which limits their flexibility and makes adopting new technologies such as generative AI difficult. Vendor lock-in occurs when institutions rely on a few suppliers, restricting adaptability and causing high costs due to technology dependence.

Restrictive contractual terms make cloud switching and multi-cloud adoption more costly or even unviable. Several studies have examined this:

In a recent survey of +1,200 IT decision-makers across five European countries, Savanta, a data intelligence company, finds evidence of restrictive licensing and other activities that inhibit market competition.

> *Licensing issues in the public sector are also rife, with 6 in 10 organisations that have considered switching saying that a key reason why they didn't change IaaS providers was due to existing licensing terms.*

The Competition & Markets Authority in the UK provisionally found that restrictive licensing **harms competition** in cloud services.

In the EU, the Commission is currently considering investigating restrictive software licensing.

> *We have also provisionally found that there are technical barriers and commercial barriers in the form of egress fees to switching and multi-cloud that harm competition in cloud services in the UK by locking customers into their initial choice of provider which may not reflect their evolving needs.*

In a recent study, the German think tank ZnT finds that restrictive licensing imposes a significant financial burden, with transferring existing software licenses to third-party cloud services potentially costing up to 25% of annual expenditure.

> *… restrictive licensing practices by dominant software and cloud providers are creating a financial burden, limiting choice, and hindering innovation.*

Recent survey results show that Finnish public agencies face difficulties in diversifying their ICT suppliers and feel locked into their existing services.

> *We are in deep vendor lock-in. In theory, it is possible to change the vendor, but it is so expensive that there is no point.*

60%

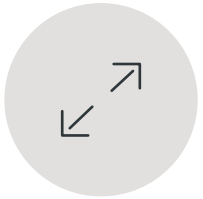
of surveyed IT decision makers in the public sector cited licensing restrictions as a key barrier to switching.

Note: Survey results for Social Market Foundation, Savanta Survey (respondents comprise N=1,241 IT decision-makers across UK, France, Germany, Netherlands and Spain – here summarised as representative for the EU27). The reports mentioned here further provide insightful estimates on the financial burden caused by vendor lock-in. However, these calculations rely on a number of assumptions making them unfit for direct conclusions.
Source: Implement Economics based on Jenny, F. (2023), CMA (2025), SMF (2024), ZNT (2025) and Savanta (2024).

Ensure flexibility and hybrid capabilities to meet evolving needs in public procurement

Governments must prioritise flexible procurement strategies to mitigate the risk of overreliance on a single provider, emphasising open data standards and interoperability to ensure long-term competition and adaptability. An AI procurement strategy should ensure that vendors meet key criteria, including:

Guarantee data security and compliance, ensuring adherence to national and EU laws (e.g., GDPR) while maintaining strict security protocols.



Offer scalable and flexible infrastructure, capable of adjusting resources based on the changing needs of public administration while ensuring reliable performance.

Align with public sector ethical standards, ensuring AI solutions promote fairness, transparency, and mitigate risks like algorithmic bias.

Provide clear service level agreements with accountability, ensuring defined performance metrics, uptime guarantees, and fast response times for addressing service failures**.**

Ensure interoperability with existing systems, enabling seamless integration with current government IT infrastructure to reduce disruption and implementation costs.

Provide carbon footprint data, using state-of-the-art data on the hour-by-hour carbon free energy for the operational emissions of the data centre.

Summary of part II

To address critical enablers, the Finnish government should…

Create cloud clarity

- Harmonise department policies and mitigate risks through government-wide risk assessments.
- Consider factors like sovereignty, service continuity, data protection, cost, innovation and required skills.

Make smart procurement choices

- Optimise AI and cloud procurement by ensuring flexibility, scalability, and alignment with open standards to avoid vendor lock-in.
- Strengthen the government's position by monitoring subscription costs, purchasing only necessary functionalities, and enforcing ethical, secure, and sustainable practices in contracts with vendors.

PART III

A bold vision for the Finnish government

Finland aims to become a world leader in the application of artificial intelligence and in new ways of work.

Ministry of Economic Affairs and Employment of Finland (2019)

The AI task force should set bold targets and adopt a task-based approach

The Finnish National Programme for Artificial Intelligence from 2019 established a task force to position Finland as a global leader in AI. The task force was responsible for developing the national AI strategy as well as applications across various sectors.

The Steering Group of the task force was mandated to act as a bridge between policymakers, government office staff and other relevant private/public partners working on concrete AI issues and implementation projects.

However, these early initiatives do not address the new challenges emerging from generative AI technologies. To fully exploit the opportunities – and mitigate the risks – of these rapidly evolving tools, Finland must take new steps towards a central strategic approach.

These concerns were also recognised in the Ministry of Finance evaluation of public generative AI projects from 2024.

Implement Economics suggests that Finland develops an updated AI strategy that applies risk and impact measures to address key barriers and harness scalability of successful generative AI applications.

High-level roadmap for capturing the AI opportunity within public administration

1 — Establish an AI task force and address the identified five key barriers

1-2 years

- Implement a task-based framework for, and approach to, the implementation strategy.
- Establish clear key performance indicators (KPIs).
- Establish clear regulatory guidance and procurement practices for cloud-based tools.
- Prioritise flexible procurement strategies to avoid overreliance on a single provider, focusing on open data standards and interoperability to ensure long-term competition and adaptability.

2 — Use risk and impact measures to prioritise

3-5 years

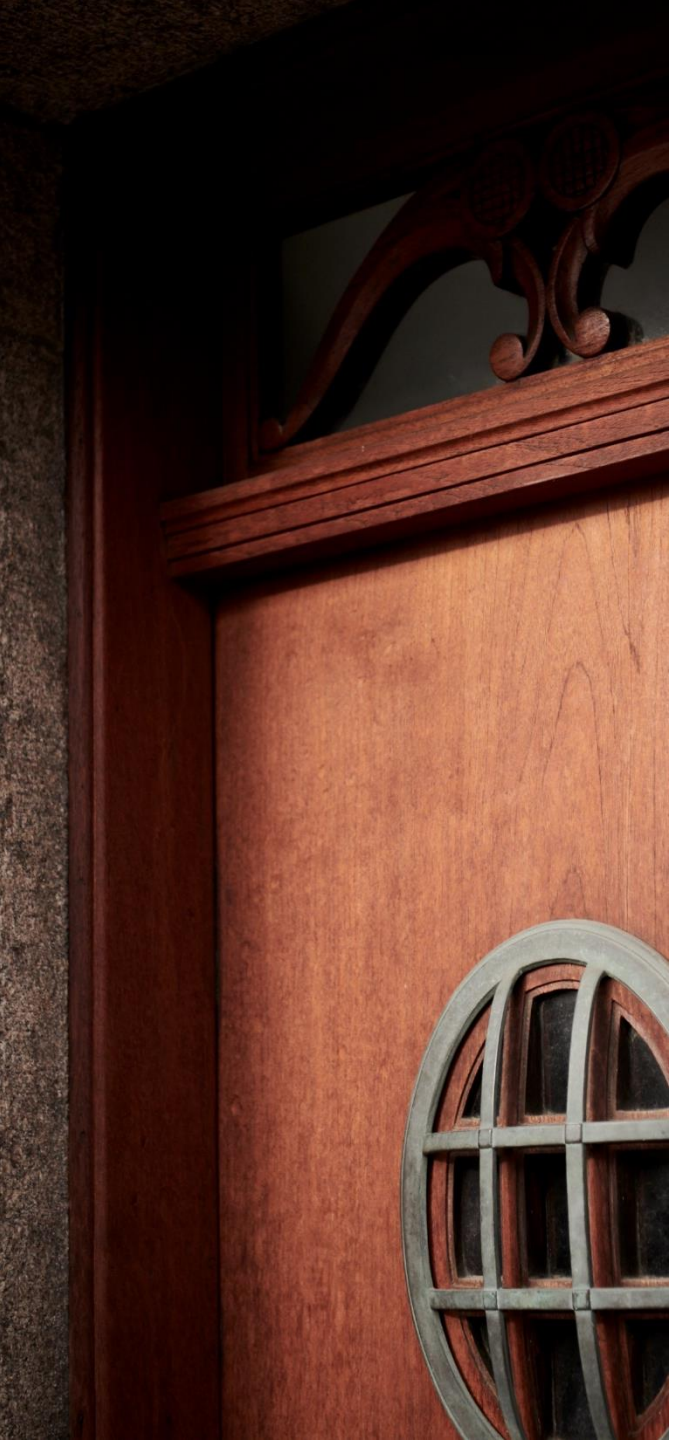
- Allocate funds toward executable and scalable applications.
- Implement scalable solutions and anchor them with cross-cutting tasks.
- Set targets for services with high citizen and business impact.
- Ensure critical enablers are in place.

3 — Scale successful applications

7-10 years

- Scale successful applications across tasks, making sure knowledge and experience are shared between institutions.
- Ensure public administration employees retain key skills to fully capture the augmenting effects of AI.

Source: Implement Economics based on the Finnish Ministry of Economic Affairs and Employment of Finland and OECD (2021).



Appendix

The economic estimates in this report are based on gross value added

Public administration employees work to ensure the efficient implementation of government policies, the provision of public services, and the maintenance of social and economic stability.

The economic value creation of these important public sector activities is hard to measure because they lack market transactions.

The value added is calculated as the sum of the costs incurred (incl. intermediate consumption, compensation of employees and consumption of fixed capital) as specified by the European System of Accounts.

The public sector creates value by providing e.g. …

Justice and economic stability

Incl. government functions like defence, security, judicial system and government administration.

Education

Incl. public schooling and higher education and research.

Social safety and cultural preservation

Incl. social transfers and arts.

Health and well-being

Incl. public hospitals and public awareness initiatives.

In national accounts, **the economic value of the services provided by the public sector is measured by looking at the related costs**.

Source: Implement Economics based on the European System of Accounts (2010).

Modelling the potential impacts of AI on public administration

Overview of the methodological approach to calculating the exposure to and productivity impact from generative AI

1. **Automation potential of work activities:** The exposure to generative AI is calculated by breaking down the automation potential of unique task descriptions and their associated general work activity in the occupational task database O*NET. In line with Briggs and Kodnani (2023), the methodology assumes that 13 of 41 overall work activities (e.g. getting information, performing administrative activities etc.) can potentially be automated by generative AI, and in the base scenario we assume that tasks with a difficulty up to level 4 on the O*NET-defined scale can be automated.

2. **Mapping automation potential of work activities to occupations:** First, the 41 work activities for 900 US occupations are mapped using importance-average activities for each occupation, providing an estimate of the share of each occupation's total workload that AI has the potential to automate. Secondly, this number is projected from US to European occupations through the European Commission's crosswalk between ESCO and O*NET and finally compiled into aggregated occupations (using the sub-occupation employment). This leaves us with the three shares that describe how big a share of the work activities for each occupation is expected to see: No automation, AI complement and Likely replacement. For public administration, we map detailed ISCO level 4 employment data in NACE sector O in Finland to the above-mentioned taxonomy.

3. **Quantifying productivity gains in public administration:** Generative AI is assumed to affect the productivity of the work activities for each occupation as follows: The "No automation" share of work activities is assumed to be unaffected by generative AI. "AI complement" work activities experience a productivity boost from automation. "Likely replacement" is the share of work activities in a sector that is expected to be entirely automated/replaced. These workers are expected to be re-employed in slightly less productive jobs. The three effects are calculated in public administration in Finland and scaled by the sector's value added to determine the full productivity potential/generation of new jobs from generative AI. Only part of the total long-run productivity increases from generative AI is expected to materialise in the economy during the initial ten-year period of technology adoption following an S-curve adoption trajectory.

4. **Mapping the potential to cross-cutting tasks:** The aforementioned calculated potential is distributed across cross-cutting tasks within public administration by mapping detailed work activities to a framework that encompasses the work carried out within this sector.

- The method in this paper is in line with the methodology developed by Briggs and Kodnani (2023) in "The Potentially Large Effects of Artificial Intelligence on Economic Growth".
- The estimation of the potential of AI across key cross-cutting tasks (step 4) is based on an augmentation of Briggs & Kodnani (2023) with granular Finnish employment data and a framework of the task composition within public administration, which is mapped to the rich database of task descriptions within O*NET.

Note: Methodology is based on Briggs and Kodnani (2023).
Source: Implement Economics based on the European Commission, Statistics Finland, Eurostat, O*Net and Briggs and Kodnani (2023).

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